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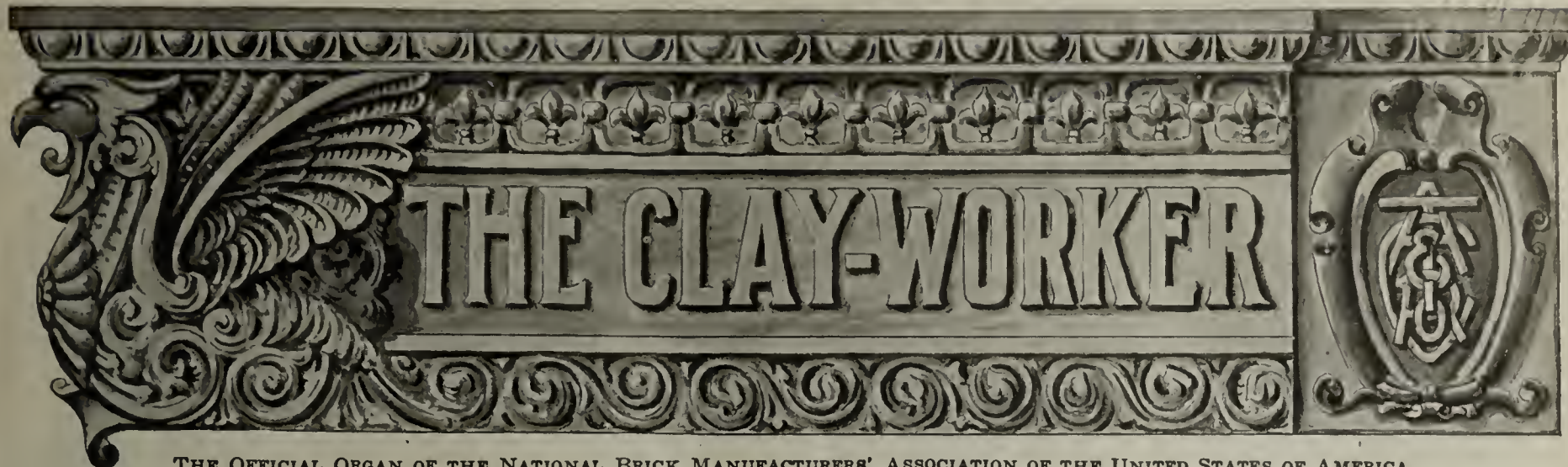
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THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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No. 1

POINTS OF INTEREST IN AND ABOUT CONVENTION CITY

Large Gathering of Clay Clan Convention, Indianapolis Jan. 23 Real Enjoyments and a Big tionize the Common Brick In-

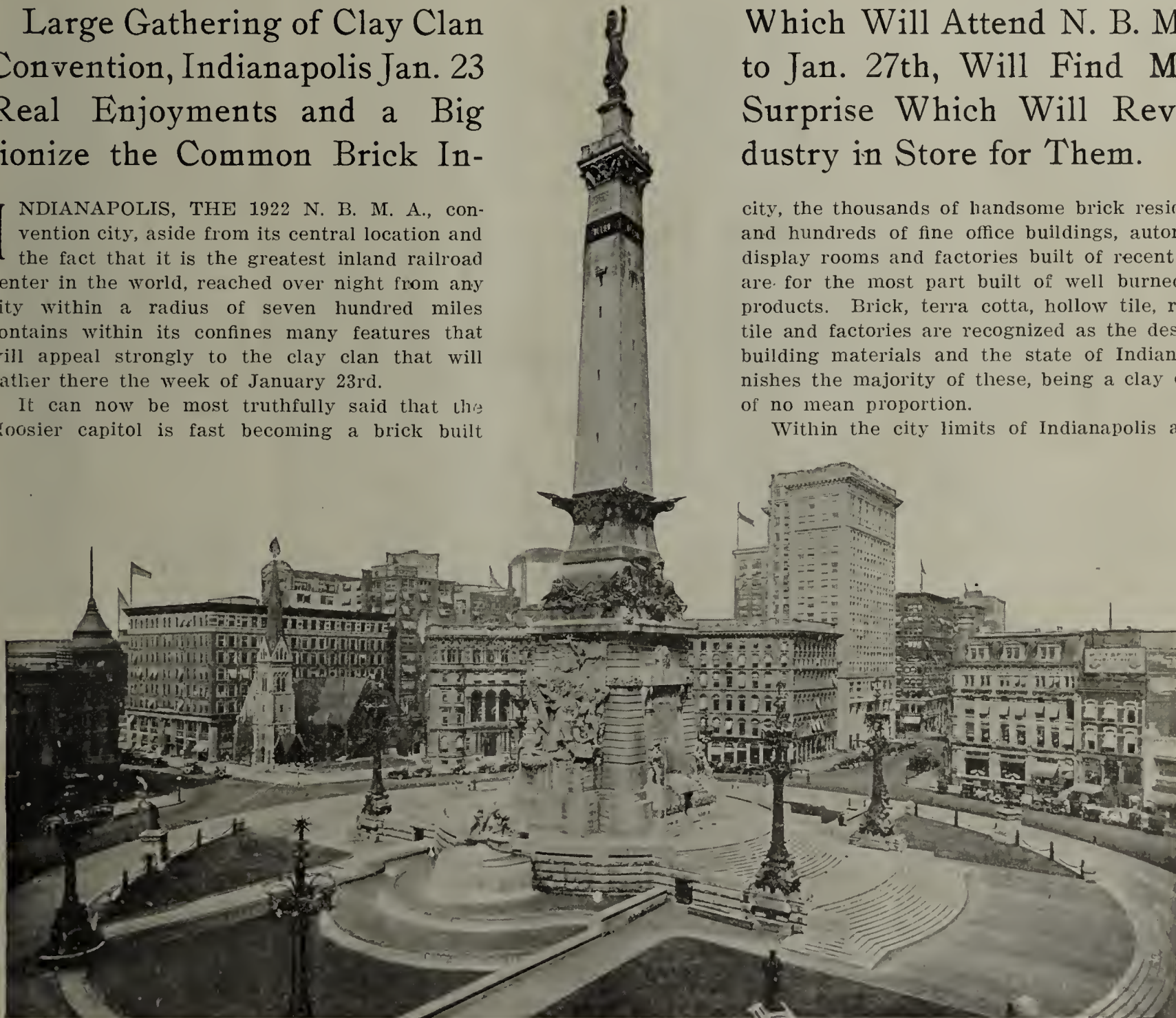
INDIANAPOLIS, THE 1922 N. B. M. A., convention city, aside from its central location and the fact that it is the greatest inland railroad center in the world, reached over night from any city within a radius of seven hundred miles contains within its confines many features that will appeal strongly to the clay clan that will gather there the week of January 23rd.

It can now be most truthfully said that the Hoosier capitol is fast becoming a brick built

Which Will Attend N. B. M. A. to Jan. 27th, Will Find Many Surprise Which Will Revolutionize the Industry in Store for Them.

city, the thousands of handsome brick residences and hundreds of fine office buildings, automobile display rooms and factories built of recent years are for the most part built of well burned clay products. Brick, terra cotta, hollow tile, roofing tile and factories are recognized as the desirable building materials and the state of Indiana furnishes the majority of these, being a clay center of no mean proportion.

Within the city limits of Indianapolis are lo-



Miss Indiana, From Her Pedestal, the Soldiers' and Sailors' Monument, Bids You Come to the N. B. M. A. Convention.

cated the factories of the United States Encaustic Tile Company and the Indianapolis Terra Cotta Company, the latter a branch of the American Terra Cotta and Ceramic Company.

A Pioneer Encaustic Tile Plant.

The United States Encaustic Tile Company owns one of

the time of their demise. This plant was the first to introduce dull finish glaze and they are now making a line of beautiful floor tile and wall tile in a variety of colors and of an unsurpassed quality. The plant is located on Sixteenth street, west of Capitol avenue and can be reached by street car from the Claypool Hotel. Visiting clay-workers are al-



Murat Theater and Shrine Temple, Indianapolis, the Finest in America, in Which Brick and Terra Cotta Play an Important Part, the Design Being Oriental in Type.

the pioneer encaustic tile plants in America, founded in 1877, has been in almost continuous operation and has changed ownership only once in this long period. The present executive officers, Mr. C. M. Cooper, president, and W. F. Landers, secretary-treasurer, have grown up in the business, their fathers having been actively interested in the plant up to

ways welcome and convention week the latchstring hangs out. And while Mr. Landers himself will be busy at the convention he hopes to welcome those of the delegates and the ladies accompanying them who may care to witness the modus operandi of making encaustic tile. Natural gas is used for burning the ware and has been the chief fuel for

years, the company owning gas wells of its own some twenty miles distant from the city.

A Fine Terra Cotta Plant.

The Indianapolis Terra Cotta Company's plant is located at 2228 N. Olney street and is easily reached by the Brightwood street car line which passes the office of the factory. This plant has an interesting history and many interesting features, that clay-workers can study at such time as they choose, convention week, for a most cordial invitation has been extended by the company of which W. D. Gates is president and George H. Lacey, superintendent. Their humidity drier, their method of applying glaze and the burning of the ware will prove interesting to the ceramists.

Indianapolis boasts of a large glass plant which can also

at 1118 East Maryland street. Mr. Ira A. Minnick is the presiding genius who directs the company's affairs and will keep open house at his factory convention week for all clay-workers.

Indianapolis, Home of Pioneer Clay Machinery Concern.

The C. & G. Potts Company, manufacturers of clay-working machinery, one of the pioneer firms in its line, has an immense plant at 816 West Washington street. They have but recently installed a large ten ton traveling crane in their new \$60,000 foundry which with other equipment makes it the most complete foundry of its type in the state and this can be taken as an indication for the better outlook of the casting and machinery trade in this locality. The capacity of the plant with this addition is almost treble that of the old and the maximum daily output will reach about 26 tons.



Handsome Terra Cotta Front of Bankers' Trust Co. Building, Indianapolis. Terra Cotta Made by the Indianapolis Terra Cotta Co.

be inspected by the delegates. Large glass demijohns and bottles are made there.

Home of the Standard Dryer.

The plant of the Standard Dry Kiln Company, manufacturers of the Standard Dryer, which is used by many of the leading brick-makers of the nation, is located at 1547 West McCarty street, and is quickly reached by street car. Robert Elliott, Sr., and Jr., and other members of the firm will be on hand all of convention week to welcome the delegates and extend them the courtesy of inspecting their fine plant and no doubt will have on hand a goodly supply of the laugh producer, Book of Smiles.

The factory of the National Dry Kiln Company is located

The new addition built during the summer of 1921 was a two-story brick structure 45x100 feet, fireproof throughout and with all modern and up to the minute appurtenances, affording greatest possible light and ventilation and comforts and facilities for the workmen. About 125 men are employed in making a general line of grey iron and semi-steel castings and brick-making machinery. The company also does a considerable amount of outside machine and foundry work.

The feature of the new addition is the cleaning and "Rattler" rooms which is separated from the foundry, eliminating the noise and dirt of the foundry itself. The C. & G. Potts Company have sold clayworking equipment throughout the United States and to many foreign concerns. During the war they shipped a number of car loads of machinery to Cal-

cutta, India, for use of the British government' in making brick.

Many Brick Display Rooms.

The center of such a great clay state as Indiana, ranking high in the production of brick and tile, naturally possesses many display rooms and offices where the agencies of many high grade firms hold forth. The most prominent of these are Hydraulic Pressed Brick Company, Board of Trade Building, corner of Meridian and Ohio streets; Western Brick Company, Hume-Mansur Building, East Ohio street; Bloomfield Brick Company, 238 Indiana Pythian Building; Wm. E. Dee Clay Mfg. Company, 730 Peoples Bank Building; Brooklyn Brick Company, 441 Lemcke Building; Harding & Co., 202 Hume-Mansur Building; Interstate Clay Products Com-

pany, Natural Fireproofing Company, The Brazil Hollow Brick & Tile Company, American Sewer Pipe Company and Ayer, McCarrel Reagan Clay Company.

These plants turn out an enormous quantity of high quality product including electrical conduits, hollow tile, silo block, face brick, interlocking brick and block, paving brick, sewer pipe, wall coping, chimney tops and bowls, segment blocks, fire clay stove pipe fittings, flue lining, drain tile and common brick. The nine large factories are located within 2½ mile radius of the center of Brazil. These factories for the most part under ordinary conditions operate the year round and one plant formerly had a day and night shift. The Clay Products Company plant manufactures a large per cent of the entire output of electrical conduits in this country besides great quantities of hollow tile and paving brick.



Public School No. 66, Indianapolis, Built of Brick and Terra Cotta, which Ranks as One of the Finest School Buildings in Indiana.

pany, 1124 Hume-Mansur Building; H. C. Adams, 1130 Hume-Mansur Building.

Among the brick dealers and supply firms are the well-known firms, A. B. Meyers & Co., Indianapolis Mortar and Fuel Company, Indianapolis Coal Company, Frank M. Dell Company, W. B. Bennett, Murphy Bros. and Hoosier Brick & Coal Company.

Outside Points of Interest.

But a short ride from Indianapolis are many fine clay product plants, the chief center being Brazil, Ind., in Clay County, where are located such plants as the Clay Products Company, Brazil Face Brick Company, Brazil Clay Company, Hydraulic Pressed Brick Company, Chicago Sewer Pipe Com-

There are many features of unusual interest to the average clayworker in this fine factory. The same is true with the other Brazil plants. A week could be spent in and about these plants very profitably.

At Terre Haute, Ind., but a few minutes ride from Brazil, is the immense plant of the National Drain Tile Company and also the fine factories of the Terre Haute Vitrified Brick Company and Vigo American Clay Company.

At Crawfordsville, Ind., an hour's ride from the convention city, are located the splendid plants of the Crawfordsville Shale Brick Company, Poston Brick Company and Standard Brick Company. Veedersburg, a few minutes' ride to west of Crawfordsville, has two very interesting plants.

At Brooklyn, Ind., a short ride to the southwest of Indianapolis, are located the plants of the Indiana Drain Tile Company and the Brooklyn Brick Company.

At greater distance from Indianapolis, but well worth while the expense and time for an inspection tour of same, are such plants as those of the Acme Brick Company, Cayuga; Standard Brick Company, Evansville; Wm. E. Dee Clay Mfg. Company, Newport; Krick-Tyndall & Co., at Decatur; Port-

MANY SCHOOL BUILDINGS TO BE CONSTRUCTED.

Evansville architects have completed plans for the erection of a new high school building at Millersburg, Warrick County, that will be built by the Roth Construction Company, of Boonville. The new building will cost about \$40,000 and work will start at once. It is announced that plans also have been drawn for the building of a new five-grade school



Brick and Terra Cotta Gable Detail of Hampton Court Apartments, Indianapolis.

land Drain Tile Company, Portland; North-Frazier & Co., Bluffton; Wolcott Brick & Tile Company, Wolcott; Cannelton Clay Products Co., Cannelton, the Bloomfield Brick Company, Bloomfield; and last but not least, the plant of U. S. Brick Company, at Tell City, where the producer gas system has been in successful operation for several years. The "Main Guy" of the company, Chas. F. Herman, an old N. B. M. A. member, is always glad to welcome visiting brick men.

building at Eldorado, Ill., that will cost \$30,000. Another high school building is to be erected at Opdyke, Ill., a few miles west of Evansville, that will cost \$40,000. The congregation of the Christian Church at Harrisburg, Ill., has let the contract for a new church that will cost \$40,000. All of these buildings will be built of brick. Several more new school and church buildings in Southern Indiana, Southern Illinois and Western and Northern Kentucky have been contemplated for the coming year.

TECHNICAL ASSOCIATIONS FOR BRICK MANUFACTURERS

Some Observations and Speculations on the Work of Related Organizations and the Importance to the Clay Industry of the N. B. M. A.

FOR THE PAST two or three years an effort has been made by a few members of the American Ceramic Society to induce members of the National Brick Manufacturers' Association, especially those of technical training to unite in a separate section of the A. C. S. In fact, a committee has come before the N. B. M. A. convention with a proposition that all work hitherto done by the Committee on Technical Investigation and the appropriation therefore be turned over to the A. C. S. This proposition has much in its favor and, under certain conditions, would be desirable. Some have even gone so far as to urge that the discussion of all technical questions of brick manufacture be confined to the sessions of the Heavy Clay Products Section of the A. C. S. In such case, the next logical step, as definitely proposed to Secretary Randall by an enthusiastic member of the A. C. S., is that the N. B. M. A. be abandoned as a separate organization and that the members all join the A. C. S. As this matter will undoubtedly be agitated further, all should be prepared to discuss it. It is a delicate subject to handle without being charged with disloyalty to one organization or the other.

A number of years ago, when it was evident that there were likely to be offshoots from the N. B. M. A., I advocated the division of the association into sections, so that each branch of manufacture could have a program adapted to its needs. Later, as I saw the different interests breaking away into separate organizations, I thought it a great mistake that the policy I advocated had not been carried out. However, I entered into the new movement, was one of the charter members of the A. C. S., and one of the original movers in the formation of the American Face Brick Association, yet I, with others, kept up membership and interest in the parent organization, not altogether for the good that it had done, **but for the good that it continued to do and for the greater good that it would do when properly supported by brick manufacturers.**

Convinced the N. B. M. A. Has Followed Right Course.

As I have watched the growth and development of these off-shoots of the N. B. M. A. I have become convinced that the results have been better than would have been the case with a large association divided into sections. The commercial associations have distinct problems that can best be solved by those directly interested meeting by themselves. So, also problems involving the technics of fine ceramics can best be treated by those who have had scientific education and technical training in these arts, the discussion of which could not be followed by others and would be of no practical value to them.

The A. C. S. has had a wonderful growth, a constant increase in membership and enlargement of its activities. For a few years it was composed chiefly of those engaged in the manufacture of the finer clay products, white ware, art pottery, floor and wall tile, terra cotta, etc., with a few engaged in brick manufacture who had a general interest in all clay-working processes and problems. Later, the Society expanded to the full meaning of the word ceramics, to include all the silicate industries, and now has sections or divisions on Art, Enamel, Glass, Refractories, Terra Cotta, White Ware and the recently organized Division that has

been given the name of Heavy Clay Products, in which are grouped manufacturers of building brick, paving brick, hollow building tile and sewer pipe. The total membership of the Society is now about 1,500. It has been of great value to the industries represented and has had an important part in their stability and development and in the excellence of their products. Moreover, through the efforts of its officers and committees it has secured substantial contributions from the commercial organizations of brick and building tile manufacturers and, with the assistance of the Bureau of Standards and the Bureau of Mines, with the co-operation of the Universities and the National Research Council, is carrying on researches that promise to be of great value to these industries. Undoubtedly, the N. B. M. A. should have led in this and it has, in a measure, prepared the way for it, but it could not have secured the appropriations from the commercial organizations. Therefore, the condition that confronts us is this: The A. C. S. is doing a great work for the brick and tile manufacturer, either as an active, an associate or a corporate member.

The N. B. M. A. Has Much Important Work to Do.

But what about the N. B. M. A.? Should it disband? Is there nothing left for it to do? It could retire with honor, as the pioneer association of brick manufacturers, that has been a mighty force in the uplift of the industry and has fathered and fostered these other associations. But I trust that such a course will not be given serious consideration. It should be kept alive and maintained, not for the good that it has done, but for the good that it should do and can do in the future. I hope that the day will never come when there is not a technical association of brick manufacturers, in name as well as in fact. Is not the brick industry large enough, important enough in the economic welfare of this great country, to maintain a technical association of its own, or must it, at this late day, become a section of another association, under the indefinite and inexact name of "Heavy Clay Products?"

Will not history repeat itself? Is not the day coming, and in the near future, when the A. C. S. will become so large as to be unwieldy, and a convention of such a large association, representing so many industries, at one time and place, be impractical? Will not the A. C. S. have an experience similar to the N. B. M. A.? Is not the tendency towards specialization rather than generalization? Is there not now beginning to be a feeling in some quarters, that certain special branches of the ceramic industries are not receiving sufficient consideration in convention programs or in research work, that the Ceramic Journal contains too much of the technology of other industries in which many members are not so much interested and the technical points in which they cannot appreciate, since the technology of their own industries, though related, in a measure, to the others, requires their undivided attention and in which the field for investigation is boundless?

To be sure, there are and always should be members of broad scientific attainments in the whole field of ceramic chemistry and physics, who take part in all the activities of the Society, but these men are mostly those engaged in instruction at our Universities or in research work of Federal

Bureaus. Men who are employed in the manufacture of brick, even though they may be styled "ceramic chemists" or "ceramic engineers," cannot find time to go very deeply into glass manufacture or into the manufacture of white ware or enameled-iron products, nor can the men in these industries give much attention to the manufacture of brick. Any one of these industries is a life work and much must remain unknown, even to the most devoted student of the art. In fact, is it not true that the longer one has been engaged in any branch of ceramics, the more he sees the necessity of specialization, the more he knows of his art, the more he sees that there is to learn and the more he realizes that the time he can give to technical reading and investigation must be confined mostly to the special problems of his own industry, by which he makes his bread and butter?

Importance of Technical Work.

Therefore, while we should all be affiliated with the A. C. S. and should do all we can to help to maintain the research work that is being done, we should keep up our own technical association of brick manufacturers. More men of technical training are coming into the brick industry every year and it is their duty not only to serve their employers but to help to elevate the whole industry, and not only to get all the information they can from the practical men but to impart something to them from the superior educational advantages they have received. As a brickmaker, you should be interested in accomplishing the greatest good to the greatest number in your industry, and, I believe, the N. B. M. A. is capable of reaching the largest number of practical men, the men who are developing the methods and equipment that are improving the quality, decreasing the losses and reducing the cost of production. I doubt very much if it is possible to bring into the A. C. S. the men whose help the industry most needs and the men who most need the help that a technical association can give.

Moreover, we want the help of those who are devoting their time and energies to the manufacture of brickmaking machinery and of the men who are giving themselves to the development of improved dryers and kilns. We want to meet these men in convention and to know the latest improvements that they have made. These men naturally feel most at home in an association devoted exclusively to brick manufacture. They are not wanted in the commercial organizations. These are close corporations, the members of which pay assessments on their sales for the purpose of securing united effort in cost accounting, in advertising and in methods of selling at profitable prices. They do not feel at home in the various sections of the A. C. S., though they are interested in and will support every effort to advance the arts to which they are catering and in which their customers are engaged.

The Needs of the Brick Craft.

The manufacturing problems of all kinds of brick and building tile are very much alike. They do not involve, to any great extent, the work of the artist nor of the chemist, as do the pottery, terra cotta, glass and iron-enameling industries. There is no problem in brick manufacture so technical that it cannot be freely discussed in the conventions of the N. B. M. A. Even the laboratory investigations, for which we must all depend upon the Universities and the Federal Bureaus, can be presented to the assembled members of the N. B. M. A. and be understood and appreciated, and just as well whether the association has one name or another. So, is it not our duty to support all efforts for advancement, to unite in every educational movement, to take an active part in both of the technical associations?

In all reason, the strongest support of the N. B. M. A.

should come from the members of the commercial associations. Every member of these associations should also be a member of the N. B. M. A. If there is any large number of brick manufacturers who do not like the way the N. B. M. A. is being conducted, let them come in and suggest the changes desired. The N. B. M. A. is a democratic organization and the majority rules. Speaking for myself, as a member of the Executive Committee, I am willing to have any changes made that will make it more efficient. Believing that the N. B. M. A. has been of vast good to the industry and that still greater things are possible, I want to see it kept alive, reinforced with new blood, enlarged by the younger men of practical and scientific training. We older members will pass soon enough and even while active in the work will gladly support any more advanced policies that will make our beloved association of greater use to the industry in which we have spent the best years of our lives.

W. D. RICHARDSON.

POTTERY IMPORTS AND EXPORTS.

A SPECIAL REVIEW OF pottery imports and exports is given in Commerce Reports of the United States for January 2nd. This review starts off with the statement that two and a half times as much German china and porcelain reached the United States in 1921 as in 1920. French china also came in greater amount but oddly enough Japan is credited with a smaller aggregate value than in 1920.

The broad inference of the review is that German competition is the thing we have to watch and meet at the present time. Meantime it is interesting to note that we are developing some export trade ourselves though we have not made a prominent place yet in foreign field.

The import figures for eleven months show a total of \$11,529,085, from which we may figure that our total imports of pottery mainly china and earthenware for 1921 was a little better than twelve million dollars, or a million dollars a month, while our exports range just a little better than half a million a month and include brick as well as pottery.

The report says that beginning with 1922 there will be a more detailed classification of American pottery exports and also the brick and tile exports will be separated as fire brick, silicate brick and other refractory bricks and shapes, building brick, hollow building tile and floor and wall tile.

LAFARGE CEMENT.

A new quick hardening cement developed in France during the war is the subject of considerable attention now in engineering circles because of the quick hardening possibilities and the fact that it seems practical to produce it as cheaply as ordinary Portland cement.

It is called Lafarge quick-hardening cement, and its composition is about five of lime to four of alumina and one of silica. It differs from ordinary Portland cement composition in that it is low in lime, high in alumina and the silica is a minor property that is perhaps more of an impurity than a helping agent.

The method of producing it is by burning in a furnace charged with coke, limestone and bauxite, and it is fused and not merely clinkered as is the case with Portland cement. It is said that the cost of manufacture makes its production possible as cheaply as normal Portland cement, and the resultant product is almost white.

In mixing and use it can be handled practically the same as Portland cement, that is, its primary setting is practically the same, but its final hardening within 24 hours, it is said, will equal the hardening of Portland cement for 28 days. It is this quick hardening property that makes the cement interesting and suggests possibilities of development in the future.

BUILDING IN BRICK

By Dr. G. C. Mars.

THE DIFFERENCE BETWEEN the misery of a man without a country and that of a man without a home is that the man without a country can have no home at all. But even if a man has a country, it profits him little if he has no home. Having a country and having a home are intimately connected. The more a man thinks of his country, the greater value he will put upon his home; and the greater the value he puts upon his home, the more he will think of his country.

To the American born and bred, his country amounts to a religion, not so much because of his devotion to the land of his birth but because of his profound belief in what America stands for, the great idea of a social and political order founded on the rights and privileges of the individual man,

the home house should be is evident to every man; that is, a house with all the character, individuality and distinction of the life within. A cottage may be just as characteristic, individual, and distinctive as a mansion. It may symbolize and express the quality and standing of its occupants as well as, or even better than the more pretentious structure.

At any rate, aside from the convenient interior arrangements of the house, as a place of human habitation, the two things which Ruskin found in the wonderful tower of Giotto at Florence, strength and beauty, ought to be found in the structure meant for a home.

With this idea in mind, one might well be justified in choosing brick as an appropriate material to build into the walls of a house. For brick certainly is imbued with the character of strength; and in view of American ingenuity added to the natural qualities of the product, it has acquired a range and variety of beauty rivalling that of the most exquisite fabrics.

If we recognize the important distinction between first and



Residence of A. M. Glossbrenner, of Hydraulic Press Brick and Terra Cotta. Alfred Grindle, Architect.

in a union with his fellow men who are guided by the principles of universal good will. But as this very condition invites great masses of unprivileged humanity, with immature, undeveloped, and often perverted minds, the purer streams of American thought and action are too often threatened with vitiation, to be avoided only by assimilating or Americanizing the cruder materials.

Of all the methods to accomplish this result, the simplest, most direct, and most effective is to see that every man, who would make America his country, should build for himself a home. If every American citizen, native as well as foreign born, could have some spot he could call his own, where he could cherish his sacred household fires upon the hearth, our democracy would well nigh reach that happy condition of welfare and security dreamed of by prophet and statesman.

Of course, the mere house is not in itself a home, but it is the outer symbol, the concrete, visible embodiment and expression of all that the home means. Without it, the strong, enduring, and preservative sense of the true home instinct can not be aroused and developed. What in general

final costs, brick also has its merits. In case of the more expensive materials, this question does not arise. For while brick costs less than stone, granite, marble, or terra cotta, it rivals them in structural and artistic claims. Admitting that brick does cost more than cheaper materials in the beginning, it is so comparatively little more that, in a very few years, it proves to be cheaper. A brick house doesn't run down, it doesn't require repairs and upkeep as other materials do. The finger of time cannot injure it. Nor is fire able to burn it. The extent to which brick enters into the construction of a house, is the extent to which it is fire-proof. The long experience of those very shrewd business men, the fire insurance people, has shown the brick wall to be the best sort of fire risk. No other kind of wall will stand fire as does the brick wall. While this makes for economy in the insurance rates, its chief interest to the home owner is the safety it affords from the dreaded danger of fire. To be consistent with the brick walls of his house, an owner should make all inflammable materials such as roofs, floors, and inner partitions, as fire resistant as possible. Taking

account of the matters of upkeep, depreciation, and insurance rates, it will be found that in a comparatively short time the excess initial cost of brick over cheaper materials is entirely wiped out and a favorable balance piled up that in the end makes brick the more economical investment.

Besides its financial merits, brick has a sort of romance about it that supplies a charm of its own. If a brick could tell its own story, we should have an epic poem. People are quite wrong in glibly referring to clay, the raw material of brick, as something rather common. To be exact, it is really an argillaceous earth, known as hydrated silicate of aluminum and designated by the chemist as $\text{SiO}_3\text{Al}_2\text{O}_3\text{H}_2\text{O}$, besides a lot more. Then, in point of antiquity, it has high claims to distinction; for millions of years before Adam was made of it, it was preparing in nature's mighty alembic through titanic trials and tribulations compared with which the most terrible fires, and earthquakes, and tornadoes, such as we know, are the merest child's play. Through terrific adversities and changes, terrestrial subsidences and upheavals, overwhelming

before the days of Abraham or the famous law-giver, Khamurabbi. By the time of Nebuchadnezzar, in the sixth century B. C., the Babylonians had acquired the art of enameling or glazing brick in various colors; and it was doubtless from the valley of the Euphrates, the cradle of human civilization, that brick making spread east and west throughout the ancient civilized world.

The Romans were famous brickmakers, as their numerous monuments, still extant, attest; and from the Romans medieval Europe learned the manufacture and use of brick, which are found in many famous churches, public halls, and private mansions of the Middle Ages. Modern England learned its brickmaking from the Low Countries, and America from England. But it has remained for the inventive genius and power machinery of American manufacturers to develop all the latent possibilities of clay, in making the most varied and attractive types of brick.

There are, in the main, three methods of brickmaking: soft mold, wire cut, and dry press, these names indicating



Residence of I. E. Solomon, Hy-Tex Brick. Frank E. Hunter, Architect.

floods, onrushing cosmic storms, bitter frosts, and blistering heats, it has passed until, in our day, it has come to be a refined, purified product of nature, showing, wherever found, a bewildering complexity and variety of composition. This variety of composition, as well as the organic and earthy impurities which it has gathered in its geologic past, make it adaptable to the manufacture of many kinds of useful and artistic products, from common drain tile to the finest kinds of Sevres.

There are two peculiar qualities that give to it this adaptability. It is plastic and will take on and retain any form given it; and it is convertible, under the influence of intense heat, into a hard and enduring substance more lasting than granite.

Long before the dawn of history, primitive man had discovered these useful qualities in clay which he made into pottery and brick. At first the material was crudely shaped and baked in the sun. But at a very early, unknown, date some genius discovered the effect of artificial heat in purifying and hardening the molded ware. The Tower of Babel was built of hard-burned brick, which were in use long

in a general way the process. By the first method, the clay, properly tempered and mixed, is, in a soft condition, pressed by hand or machine into the molds and then dumped on pallets for drying. In the second method the clay is mixed and tempered into a stiff mud which, in the form of a long bar, whose cross-section is the size of a brick, is conveyed by a band on to a slotted steel table under a series of tightly strung wires which at proper intervals descend and cut the bar into the required sizes. Those green brick are then taken off the table and stacked on racks which are run into drying sheds. By the dry press method, the clay is ground into fine granules and then subjected to heavy pressure in proper sized molds, from which it is taken to the kilns.

When the green brick are sufficiently dried, they are set in the kilns and are ready for the fire. The process of burning requires very careful handling and takes from six to ten days, sometimes up to a temperature of 2,200 degrees Fahrenheit, depending upon the nature of the material and the result sought. In the first stage the water in chemical combination with the clay is driven off; then an oxidizing process begins by which impurities are burned out of the clay or

chemically changed into various color tones; finally the mass is brought to a state of incipient vitrification where it is fixed in its final form by withdrawing the fires and letting the kiln cool. When the brick are sufficiently cooled, they are sorted and stored in sheds or carried directly to cars for shipment.

The result of this long trying process gives to the brick their outstanding merits of strength and beauty. Their strength lies in the nature of the material itself, to which the intense heat has given an enduring toughness and hardness. In fact, a well-burned brick will stand harder usage than stone or granite.

The beauty of the brick is the result of many and complex causes, chiefly involved in the burning. Sometimes different clays are mixed together before molding, or certain metallic elements are added for color effects. Perhaps the surface of the green brick, especially in the wire-cut process, is treated in various ways to get texture effects in the finished ware, but it is the treatment in the kiln upon which depends

grays, the buffs, and the reds, presenting a bewildering variety of shadings. Aside from the obvious light, medium, and dark in each range of color, there are many tones that may be clearly distinguished. Pearl grays, creams, and ivories will shade off into light tans and buffish shades which deepen into clear buff, golden, and light and dark bronze tones; while the reds offer a fascinating choice from the top to the bottom of the scale, in deep reddish and chocolate browns, maroons, or even gun metal blacks. Here and there green, blue, and purple shadings will show through and give an indescribable richness to the surface.

All in all, either from the standpoint of surface texture or color tones, or both, the most exacting colorist may find material for his architectural palette. Naturally, tastes differ greatly, but whether a monochrome or polychrome effect in the wall surface is desired, modern manufacture of brick meets the demand. The prevailing choice, however, seems to be for a wall surface in the brick house that permits a pleasing variety of color blendings. The best effects are se-



Beautiful Suburban Residence of Hy-Tex Brick. George & MacLucas, Architects.

largely the final result. The faces of the brick may be set so as either to get the full force of the flame or to avoid it. Then the fires may be speeded up or slowed down so as to produce a clear flame or one reduced in intensity by heavy kiln gases, for the sake of the effect upon the ware. Most of all, it is the rising intensity of the heat, producing mechanical and chemical changes in the clay itself, that gives to the finished brick not only its ringing soundness but its beautiful coloring. For the flames that bring the material to its final set oxidize the contained impurities, such as lime, magnesium, and especially iron, and produce the great variety of colors and color tones seen in well-burned brick.

In selecting brick, one has both surface texture and color to consider, each modifying, more or less, the other. In surface texture there are the smooth, almost satin finishes, the semi-smooth or matte-like surfaces, and the roughs, in great variety, from merest granular indentations to heavy cross scorings. These rough surfaces, by their innumerable minute shadows, appreciably modify the underlying color tone. Then, when it comes to color, we have three main ranges in the

cured by the use of analogous rather than strongly contrasting shades, so that the colors melt into each other smoothly as they do in nature. Thus a beautiful fabric may be woven out of the burnt clay or, to use another figure, a color symphony which amounts to a veritable work of art.

It would, however, be a fatal mistake to trust this result entirely to the brick. Commonplace as mortar may be, it nevertheless plays an exceedingly important role in the composition. The mortar joints cover on the average, one-seventh of the wall surface, and any artist will tell you that its color, size, and form will greatly modify the appearance of the wall. A beautiful brick may be quite deadened by the wrong mortar joint, while a dull and ugly one may often be saved by a well-chosen mortar color and joint.—Country Life.

Brick salesmen can get a lot of good ideas and information by frequent visits to brick plants to look over the layout, and in like manner the brick manufacturer may gain useful information by visiting jobs where his product is being used.

GIVING A THOUGHT TO FIRE INSURANCE

By John B. Morton, President National Board of Fire Underwriters, New York.

SO CLOSELY are stock fire insurance companies public-ly regulated and supervised by the authorities of all the forty-eight states that little we do escapes them. All is open to the public in sworn returns, printed in state reports. The worst is always set out in cold type. New York and Massachusetts were the first states to establish public supervision. Now all states have officials, usually called "superintendents of insurance" or "commissioners of insurance," to enforce their insurance laws.

Our offices, records, bookkeeping and all transactions are open to the scrutiny of any and all of the commissioners all the time, and at our expense, of course. Only a few years ago examinations of insurance companies were very burdensome, as well as expensive, and furthermore greatly interfered with office routine and the bookkeeping that is

five years to make it simpler, and indeed these periods do embrace the bulk of our acceptances. Now we do not at once "earn" all these premiums received. The first month we earn only one-twelfth of the one year premiums, one thirty-sixth of the three year premiums and one-sixtieth of the five year premiums. The remainder we are required by law to set aside as a "liability for unearned premiums."

In other words the premium you paid is ours because we have issued against it our obligations (policies) to indemnify you against loss by fire, but we cannot use all these premiums in our business for we have not "earned" them as yet, though our liability continues of course until the premiums are all earned. To offset our expenses which we incur in handling inspecting passing upon and recording all these premiums of yours which come to us from agents and brokers—expenses that are very heavy—we draw on our surplus funds contributed by stockholders, secured from appreciated investments, received as interest or gained from our business transactions—a surplus maintained for your greater protection and to give you greater confidence in



Imposing Hy-Tex Brick Residence of John J. Madden. Herbert Foltz, Architect.

such an essential part of our business. Here the National Convention of Insurance Commissioners has co-operated to bring order out of chaos by instituting what is known as "Convention Examinations," or examination by several states at one time the results of which are generally accepted by all other states.

Common sense must govern fire underwriting as it must govern every other business. It is easy enough for a merchant to say that he took in \$100,000 last year and that as he paid out only \$50,000 he made \$50,000 profit. Men often go to the wall on that formula and yet it is the one most frequently misapplied to the business of stock fire insurance companies. In other words, your merchant who is not deceiving himself takes an account of stock by making an inventory and finds out whether he has made a real profit or whether he has, after all, only a trade balance upon which there may be profit or loss in the future.

Stock fire insurance companies accept thousands of premiums during a given month covering policies issued to terminate in varying periods of time—say in one, three and

our business integrity and financial responsibility.

This process is repeated over and over again, month by month and year by year, liabilities being established against our new premiums as received, and the "earned" premiums coming out of the liability account with the methodical approach of the termination (we call it "expiration") of the various policies. All the while we are discharging the losses against contracts (policies) outstanding so that what is left in the course of time—and believe me it is scant enough for such a hazardous business—belongs to us. It is at last "earned."

It is my hope that I have been able to explain this rather intricate subject of the earned and the not yet earned (we call them "unearned") premiums that have been so much discussed of late.

Many years ago when laws were first introduced to establish liabilities for not yet earned premiums, some companies were handling their business on the income and outgo basis—as was the merchant I described to you who was not taking an inventory—and were headed for inevitable failure. Today,

for your safety, the law is rigidly applied to all stock fire insurance companies and failures are negligible.

What with the proper handling of this particular account—and it is one of the heavy expenses of our business—so it can be checked readily by examining commissioners to see that it satisfies the rigid requirements of law; what with keeping our funds invested so as to observe the laws of all the States and what with all the other requirements of law we are called upon to meet, while it could not be held that we are supervised too much, it is fair to say that we are supervised amply for your protection and our own good.

ANNUAL MEETING OF THE NEW JERSEY CLAY- WORKERS.

THE NEW JERSEY Clayworkers' Association and the Eastern Section of the American Ceramic Society held a joint meeting consisting of two sessions in the Fine Arts Room, Queens Building Rutgers College, New Brunswick, N. J., Friday, December 16. There was a good attendance, seventy ceramists being present. An interesting program was rendered mostly along technical lines. The progress in the erection of the new Ceramic Building was the subject of much enthusiasm and comment. The roof and cornice are now being put on and it is anticipated that the building will be completed sometime in May when a fitting dedication ceremony will be held.

President Abel Hansen opened the morning session with the following address:

ADDRESS OF PRESIDENT ABEL HANSEN.

Gentlemen:

I will now call the N. J. Clay Workers' Association to order and before we go into the regular routine of our business meeting, election of officers, and so on, I will take up just a little of your time to make a few remarks which I have had in mind for some time.

Today, gentlemen, we face a future in ceramics filled with wonderful possibilities—the final completion of the School of Ceramics at Rutgers College will mark one of the greatest milestones in our history and open the way to world-wide supremacy.

I might say, gentlemen, that the last two years have passed quickly. The active co-operation of all who were interested has done much to lighten the duties of the President and facilitate the work.

It is particularly gratifying to me at this time to know that the pledge made to the Governor of the State of New Jersey before the bill was signed, has been most generously fulfilled.

We are, however, but at the beginning; the foundation has been carefully laid and it now depends upon those who take up our work to bring it to completion. No organization is bigger than the individual members who compose it; therefore, let the personal responsibility rest upon each one to continue to "carry on."

The State of New Jersey has many reasons to be proud, but the fact that it stands third in the manufacture of ceramics is one of its principle assets. This should be most gratifying to us as an organization and should inspire us to manufacture products not only great in quantity but unexcelled in quality.

You are probably aware, gentlemen, that there is an active propaganda to duplicate American Manufacture especially of ceramic ware. It is stated that our glaze wears off in hot water after using and points to the perfection and cheapness of the European products. It is stated that labor is so plentiful and cheap in Europe that the article can be brought here and sold cheaper than we can make it. Now, there is but one remedy for propaganda of this sort; we must prove to the world the superior excellence of our home production.

Here we will have a school of ceramic culture with a

laboratory perfect in every detail—a teaching force composed of the greatest minds bearing on the subject—a student body of recognized ability capable of expert training; in the light of all this does it not seem possible to expect the most perfect results?

Every great piece of work in the world has first had its place in the human imagination. If a man is about to build a model of something, he first pictures in his mind the kind of model it should be; thus, the architect, the painter, the contractor, the manufacturer, traces in his imagination the mental picture of that which he would produce.

What we need at this critical period of our national existence are men of broad vision, men who are not satisfied with being expert copyists, but men who can originate and create.

We have lived through a period of destruction—what has it brought us? A period of depression and business stress. Let us now bend every effort to construction which carries with it prosperity and success.

Let our representatives begin by a systematic education of the public to a full realization that we can and will offer the highest and most superior grade of product at a fair price.

Let us constantly aim to raise the standard so that we may be excelled by none.

To many of us who have grown old in the work is the supreme gratification that the trail has been blazed; now let the younger generation carry on the work, feeling that in so doing they are rendering the highest form of service to the greatest country in the world, the UNITED STATES OF AMERICA.

George H. Brown, secretary-treasurer of the organization, read a report covering the minutes of the previous annual meeting held in 1919 and gave a review of the progress that had been made in connection with the new Ceramic Building. He told of the donations and funds that had been collected by various committees in this work and also gave a financial statement of the association.

The proposed rules, new by-laws for the organization to conform with the requirements of the American Ceramic Society, were read by R. H. Minton, chairman of the committee recently appointed. The recommendations were unanimously adopted.

The following papers were read and discussed during the two sessions:

Notes on the Effect of Composition on Mechanical Strength of Porcelain Bodies by G. H. Brown and C. C. Clark, Department Ceramics, Rutgers.

Some Notes on Material and Processes in Electrical Porcelain Manufacture by T. A. Klinefelter, Atlantic Terra Cotta Company, Tottenville, Staten Island.

Effect of Nickel Salt on the Color by G. M. Tucker, New York Architectural Terra Cotta Company, L. I., New York.

The Properties of Some Ball Clays by H. H. Sortwell, U. S. Bureau of Standards, Washington, D. C.

Manufacture of Soft Mud Fire Brick by F. B. Allen, of M. D. Valentine Company, Woodbridge, N. J.

At the close of the morning session the election of officers occurred with the following selection: R. H. Minton, Metuchen, president and chairman; Andrew Foltz, Lambertville, vice-president and vice-chairman; C. A. Bloomfield, Metuchen, councilor, and G. H. Brown, secretary-treasurer. The executive committee as announced is as follows: Abel Hansen, Perth Amboy, chairman; August Staudt, Perth Amboy, and Chas. H. Cook, Trenton. The five members with terms expiring in 1922 are F. A. Whitaker, Leslie Brown, R. L. Clare, F. W. Dinsmore and C. W. Crane. The terms of Douglas J. Fisher, D. Parry Forst, C. S. Maddock, Jr., E. V. Eskeson and William Scammel expire in 1923, while the terms of C. T. H. Phillips, Frank Valentine, O. O. Bowman, F. Stanger and George Simcoe expire in 1924.

After a satisfying luncheon at the Hotel Klien the afternoon session was taken up with President-Elect Minton in the chair. After the reading and discussion of the papers, President Minton inaugurated a round table talk on kilns during which some interesting points were made by the president as well as August Staudt, T. A. Klinefelter, Leslie Brown, C. W. Hill and Chas. F. Geiger.

Chas. Cook presented a report of the executive committee and the convention was adjourned after a membership drive which resulted in the addition of a score of new names to the membership roster.

Written for THE CLAY-WORKER.

AMONG PHILADELPHIA BRICK MEN.



BUILDERS and contractors were happy to see the close of 1921. It was a year of cautious moves, promising, yet uncertain. Changes were obviously necessary and they knew liquidation had to come. At the beginning of the year, 1921 was to be dreaded but at the close there was a universal sigh of relief and expression of faith in 1922 as the year when things would return to normal.

This feeling pervaded the three closing months of last year. Building activity began to expand in October. Office buildings, theatres, apartment houses and extensive dwelling operations were announced by those who considered things too unsettled last spring to begin work. There was, however, much necessary work, shown by the issuance of a record number of permits for the year, 12,676, for work to cost \$43,790,780.

In the production of homes, only about one-third of the normal supply has been built, and this has been due to the fact that the public had been led to believe it would be impossible to reduce the cost of constructing homes to the pre-war basis. This, however, cannot take place as the cost of living at present is 75 per cent. above the 1914 level and the tendency is upward rather than otherwise, so that the adjustment of wages in the building industries here that were put in effect on May first last, are undoubtedly proper rates upon which to proceed with the building program.

So far as the cost of materials that enter into dwelling construction are concerned, indications are that present prices are lower than will be obtainable later on this year. Estimates for the construction of small dwelling houses recently compiled are more than double the pre-war cost, and public improvements, such as sewers, water mains, paving of highways, etc., are running three times the pre-war cost.

Improvement in activity is looked for shortly since money is more easily procurable. The existing stock of small dwellings is expected to be quickly absorbed by persons who are inadequately housed now, and have been waiting for business in general to become more stabilized before making definite arrangements for purchasing a home. Present prices, moreover, are considered lower than they will be within the next few months.

More than 50 per cent of the permits last year were issued for alterations and additions which totalled \$14,278,600. Dwelling construction led all other classes of building. Permits were issued for the erection of 2,250 dwellings and tenements at a cost of \$12,959,110. This is an increase over the 1920 total by 964 dwellings. December was the best month of the year for dwelling construction. November was the best month for general work, the total being \$5,796,695, and October, \$5,533,225. Last August the city was 300 dwellings behind the 1920 total.

It was estimated at the beginning of 1921 that there was a shortage of 6,900 dwellings. The average number erected

yearly prior to 1919 was 7,140. The average from 1917 to 1920, inclusive, was 2,550, but this low average was somewhat relieved because it had been estimated there was a surplus, prior to 1917, of about 12,000 dwellings, deducting, however, about 550 dwellings torn down to make way for other construction. The shortage was also minimized by the conversion of many one-family dwellings into two and three-family houses.

Large permits were scarce in 1921, although one permit issued called for one million dollars worth of work. No large hotels were erected, only a few fair-sized office buildings; the large operations were on motion picture theatres, some bank buildings and a great number of garages.

Although many builders are guarded about statements as to what this year will develop, announcements made within the last month or so indicate that a large number of good contracts will be awarded this spring. There are the superstructures to the art museum and library buildings to be erected on the Parkway. Foundations are completed. There are also in course of planning the \$4,000,000-office building at Fifteenth and Chestnut streets; the 16-story theatre, store and office building at 16th and Market streets for the Fox Film Company, and the Ben Franklin Hotel at Ninth and Chestnut streets. Plans are in progress for a cold storage plant to be erected at Water and Bainbridge streets to cost \$2,000,000; the 20-story office building of the Atlantic Refining Company at Broad and Spruce streets for which contract has been awarded; the \$750,000-Temple University addition; the \$750,000-Y. M. C. A. building, and the bank addition of the Girard Trust Company. Burton C. Simon announced last month that he was receiving bids on 400 houses to be erected in the southern section of the city and it is said John H. McClatchy intends erecting 500 dwellings during the year.

A peculiar fact about the trend of building in 1921 is that more money was expended in this city on the construction of garages than on workshops, churches, schools, hospitals, libraries, welfare buildings, and powerhouses combined.

A few manufacturers of building bricks report a slight increase in demand, but the change in the industry as a whole is so small as to be really negligible. Business is still well below normal even for this season. Production in most cases just about equals sales, and in general averages less than 60 per cent of the possible output. In other instances stocks are already beginning to accumulate, and unless manufacturers cut down operations in accordance with demand, this situation will no doubt soon exist in all yards. One manufacturer has stated that it will be his policy to reduce output, as stocks are already large enough and he does not desire to increase them.

Prices have not changed in Philadelphia, although a slight downward trend is reported in neighboring cities. Raw materials are firm, and wages which are the chief item of cost have not been reduced since early in the year. Collections are slow to fair.

The situation among manufacturers of fire bricks is described as being the worst in twenty years. There is practically no demand at all, and plants are either entirely closed down or are operating at less than 25 per cent of capacity, whereas under normal conditions they would be running full at this time of the year. Efforts are being made to keep stocks down to a minimum in view of gradually falling prices.

Local representatives of eastern Ohio semi-porcelain concerns say they are sold ahead six months, while one sees enough business in sight to insure steady operation throughout the year.

THE QUAKER.

There is never a best time to advertise, but the right time is now.



OBSERVATIONS ON BURNING

Taken From the Types of Continuous Kilns, One in Which the Fire Moves and the Ware Stands Still and the Other in Which the Ware Moves and the Fire Stands Still. The Ones in Which the Fire Moves Are Divided Into Two Classes, One the Compartment Type and the Other the Tunnel Type. The Moving Ware Kiln Is Divided Into Two Classes, One With a Muffle and One Without a Muffle or What Is Called Direct Fired.

THERE HAS BEEN a lot of discussion among manufacturers of burnt clay ware, more particularly those that make brick and tile out of the coarser clays and shales, as to which one of the two types is the better kiln, and also as to which of the two classes of each type is the better type and there is much difference of opinion existing on this point.

Probably the moving fire type of the tunnel kiln, is cheaper than any of the others to build, and it is also probably true, that the compartment type of the moving fire type is the most expensive to build.

For the sake of brevity, the moving ware kiln will be called the "Car" kiln, meaning that the ware is burnt on cars that pass through it.

The compartment kiln is built in compartments of a certain number, preferably fourteen or more, and in some kilns each compartment has one big wall, and in others two big walls, to each compartment. It has been found by actual practice, that few compartment kilns with less than fourteen compartments give good results, as that number permits of a larger cycle in operating.

This type of kiln is built in one unit—that is, all of the chambers are in one kiln, or half in one kiln, and the other half in a twin alongside, and the fires carried underground from one twin to the other to make the burning cycle complete, while in the single unit type, the fire must be passed under the kiln to the first chamber, and that method causes a certain amount of wasted heat induced by the radiation of the long travel of the return firing tunnel.

A considerable amount of pavers are burnt in this type of kiln, and some very good results are obtained, but there is considerable difference in the temperature of the top and the bottom of the chambers, more particularly is this true where the crowns are high and the chambers wide, and it has been found in practice, that it pays to build small sized chambers and more of them, to get an even temperature which means a closer shaded ware. In some of the latest types of this kiln the chambers are only sixteen feet on centers, and eight feet high.

The compartment type is the most costly to maintain, as the walls must necessarily be very thick to hold in the heat, and big thick walls in any brick kiln, suffer more from the constant expansion and contraction, than the thinner walls do, and in addition, there is more heat wasted in heat-

ing up the chambers—that is, the walls and the crown and the underground flue work.

On the whole, however, the compartment type is usually considered a better investment than the tunnel type is, although in some of the kilns of the Hoffman type, in which the ware is fired from both top and the sides, they get very good results, with but few light brick and few overburnt ones.

The German and English Hoffman kilns are commonly used in this country and are the best types of the straight tunnel kiln, and by far the cheapest to build, and their operating cost is about on a par with the compartment type.

The prevailing type of compartment kiln used in this country has been that of the German Mendheim, and also those put out by the late Peter L. Youngren, one of the best known kiln men in the country, and these kilns have generally given pretty good satisfaction, and produced a large percentage of uniformly hard burnt ware. Some of these kilns were built in twin units, and some in a long straight row; most of them were fired with producer gas, and some few with coal, but coal is not particularly desirable for use in a compartment kiln.

In passing from the moving fire type, it might be well to state, that while this type of a kiln was a good kiln in its day, yet the successful use of the moving ware kiln, has to a large extent relegated the former (moving fire kiln) to the discard. In order to stand the terrific thrust of the constantly moving fire, the walls must be made extra strong and thick, and on the other hand, the thicker that these walls are the more heat is wasted in heating them up every round that the kiln is burnt, and in addition, there is quite a large labor expense on the moving fire type, that is done away with in the moving ware type. All other conditions being equal, a moving ware or car kiln, will take about ten to fifteen per cent coal less, than will one of the moving fire type.

The cost of construction on the compartment type of the moving fire kiln, will average about twenty per cent more than it will in the average type of the moving ware or car kiln.

The number of tons of bricks or tile that are tied up in a compartment kiln as against the number of tons in a car kiln of the same capacity is very large, and in most compartment kilns, bricks made today are not ready for the market in a month, meaning that you must always tie up a month's run of brick in the process of manufacture—a very expensive feature. On the other hand, in most of the well regulated car kilns, a car going through the kiln from the time that it is spotted to the time that it is pulled, is about twenty-four hours, so that if the capacity of a compartment kiln was a million per month, you would always have to have that many before or behind the fire, while on the other hand, in a car kiln you would hardly have much more than a day's run in the kiln at any time, saving all the money tied up in

product in the other kiln, as well as the time and labor to make the million brick.

Now, let us consider the moving ware or car type of continuous kiln, in which the fire is concentrated at certain points along the side of the tunnel, and the ware is put in at one end, and goes through a preheating or water smoking zone, then proceeds on through a higher temperature zone, and so on, until it gets in the settling or what is known to the trade, as the "soaking" zone, and from there by various degrees of speed and temperatures to the cooling zone at the discharge end of the kiln, at which point it is ready for loading out into stock or into the box car.

There are two types of the car kiln, one in which the fire from the furnaces is fired directly in the ware that is stacked on the car, and the other, in which the fire is shot through a muffle, and never at any time comes in direct contact with the ware. In the former type or direct fired kiln, there are quite a lot of different makes, and in the burning of a ware with a long burning range, such as the various pottery and refractory people use, this type has usually been successful but there are no instances on record, where it has ever been a success on the burning of the low grade heavy clay products, such as bricks and tiles, but inasmuch as the game is still young, some one may eventually design a direct fired car kiln that will successfully burn the coarser clay wares, and it is to be hoped that such will be the case, but in the meantime, the pioneer who does this, is going to meet with many failures and spend a lot of money before he reached his goal, and as most brick and tile makers look with more or less skepticism on direct fired car kilns, they are likely to "let George do it."

There have been dozens of car kilns built and torn down again, in which the fire was fired direct onto the ware on the cars, which held either common brick or tile, and there is yet to be recorded a single instance in which they have been a success.

By the way of comparison, it might be stated that during this year there have been perfected several kilns of the muffled type that are now successfully burning common clay and shale bricks, while up to this year there were none in operation.

There have been two large plants built this year—1921—that offer a good opportunity for comparison in the different methods of using continuous kilns, both plants being face brick plants, using common shale, and both being built out of brick and steel construction, one of these plants has a twelve-chambered compartment kiln, and the other one a late type of the muffled fired car kiln, both being built to turn out a million standard size face brick a month, and the plant that has the car kiln was built at an approximate cost of two hundred thousand dollars, completed in operating shape, while the other at a cost of around five hundred thousand dollars.

This estimate was given the writer, by the owners of both plants.

In the car kiln plant mentioned, dry press face brick of the highest grade are loaded on the kiln cars at the off-bearing table, and shot into a patented dryer, which dries them out in less than eight hours and are then loaded or pushed direct into the kiln, and go through and are drawn without anyone touching them from time they are put on the cars to the time they are loaded. It is expected that on this same plant, stiff mud face brick will be made, dried and burnt in the same way—that is, without rehandling them—and experiments were recently made, which show that the scheme is feasible and practical.

The writer sat for two hours and watched them draw brick from this kiln, and during that period of time, no

brick were culled, all loaded out as first-class, selected face bricks. There was hardly any appreciable difference in the shade of the brick, but a well-trained sorter was getting two shades out of them, although the ordinary layman who is not a practical face brick man, would have thought that they were all of one shade.

The car kiln plant was designed and built by the son of the principal stockholder of the company, and it is a plant that any one can be proud of, as they not only have the burning end down to a science, but every piece of equipment is placed so as to get the maximum output on the lowest possible production cost, and but few laborers are seen around on the plant.

In conclusion, if a manufacturer visits both plants, it will not be hard for him to make up his mind as to which is the better proposition. Yours very truly,

JAMES P. WILLIAMS,
Consulting Engineer, St. Louis, Mo.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



DEAL WEATHER CONDITIONS have prevailed in Southern Indiana during the past month or two and this has had the effect of greatly stimulating the building operations in Evansville and vicinity, as well as in many other cities and towns. During the past summer and fall there have been in the neighborhood of 200 residences built in Evansville and a good many more houses are now in the course of construction. Many more buildings have been planned for the coming year. Contractors and brick manufacturers in Evansville are of the opinion that 1922 will be one of the best building years in a long time and will be much better than the present year. It is not believed that building materials will be much lower in price, if any. The contractors say that people who have postponed building this year in the belief that prices of building materials will be cheaper next year are doomed to disappointment. They assert that while in some instances materials will be a shade cheaper; on the other hand some materials will even be higher in price next year than they now are. Some of the residences built in Evansville this year have been of brick. Manufacturers of brick have been very busy during the past month or two. They report that they have not only had a good local demand but that their demand in neighboring cities and states has shown some picking up and that they are in fact well pleased with the outlook for the coming year.

John Andres, secretary of the Standard Brick Manufacturing Company reports the year just closing has shown a big improvement in business over the year 1920 and that prospects for the coming year are very bright and that the brick manufacturers are looking on the bright side of the trade picture. The plants of the Standard Company in Evansville have been getting a nice volume of trade during the past two months, according to Mr. Andres.

Mr. Andres has been a member of the water works board of that city during the past several years and it is understood that he will be re-appointed by Mayor Benjamin Bosse, when the latter starts serving his third term on the first of the coming year.

Michael D. Helfrich, pottery manufacturer at Evansville, has offered to sell a large tract of land west of Evansville to the city authorities for the purpose of opening a large recreation field and athletic court. It is expected the city will take advantage of the liberal offer of Mr. Helfrich.

A HOOSIER.

BUILDING GOOD WILL INTO BRICK.

An address by Mr. Herbert S. Houston, Former President Associated Advertising Clubs of the World, and late of "World's Work" and "Country Life in America," read before the Convention of the American Face Brick Association, held at the Greenbrier, White Sulphur Springs, West Virginia, December 8th, 1921.

Mr. Chairman and Members of The American Face Brick Association:

When I was asked by Dr. Mars to come down here today I tried to think what I might say that would justify my coming and justify him in your minds for asking me to come. I thought probably the best thing to do—because I wanted to be of service if I could—was to prepare a brief address which would give in a limited compass a sort of view as to what co-operative advertising might be expected to do, and a brief resume, if you please, as to what co-operative advertising has done, and so on this subject which is on the program opposite my name "Building Good Will Into Brick," I prepared a very brief address which will take me about ten minutes to read, and I will say right here that if it happens to establish any point of contact in the way of arousing any inquiry in the minds of anyone here, if that inquiry should take verbal form and if I can answer it when I get through, I shall be most happy.

Every house is built in someone's mind before it is built on the ground. I recall that a rambling brick house that now stands on the north shore of Long Island was borne about for years by Mrs. Houston and myself before it finally became a thing of bricks and mortar and tile, all blending into a harmony of color and unity as our home. And while we carried it about in our minds, adding a wing here and a gable there as we saw some house in the beautiful English countryside that interested us, it seemed almost as real as it does today. The truth is that the market for any product is in the human mind. There must be good will created for an article before you want it and you must want it before you buy it.

The N. B. M. A. the Starting Point.

My coming here today to address you is an illustration of the long life of good will. Of course I should have counted it a pleasure to respond to an invitation from my dear old friend, Dr. Mars. But quite apart from that personal reason, there was a good will value in favor of advertising that I had been able to get into the minds of some of your membership, through an address I delivered before the National Association of Brick Manufacturers at Rochester twelve years ago. To my surprise and satisfaction, it was stated that the co-operative advertising campaign in behalf of brick, that was later undertaken, had received some of its impetus in the suggestions I presented at Rochester. Whether this is merely a generous compliment or a fact, I am sure that I at least, in the preparation of that address, convinced myself of the value of brick and that conviction has remained as enduring good will.

The campaign you have been carrying on in the magazines and class journals and through your beautiful booklets, in full color, I am confident has been a success because it has been so skillfully directed and so wisely placed that it was bound to build up a great body of good will in behalf of brick. While I haven't the relative figures as to building materials, during the dull times, I am sure that brick has held its own. That immediate result from your campaign doubtless justifies it as a profitable undertaking, but the cumulative result is the one that returns both principal and interest on the investment; for advertising is like brick—it endures. Not only does it endure but it enlarges, while it endures. By that I mean that you are causing to be erected three brick houses in people's minds to every one that is actually constructed on the ground. That may sound like pure guesswork, but it isn't. When I accepted Dr. Mars' invitation to pay a return engagement to the Makers of Brick, I undertook to check up some of the things I said in Roch-

ester twelve years ago. I must confess that that earlier address was more or less an act of faith—looking to the "evidence of things not seen," for general building advertising twelve years ago, especially of an industry in a co-operative way, was in its beginnings. On investigation among building advertisers I have found that the average length of time that elapses from an inquiry to an actual building operation is three years. So it is doubtless correct to say that, approximately, you are building three houses in people's minds to every one that you are building on the ground. Therefore, your advertising is always creating potential building, in a ratio of three to one, to actual building. But another cumulative factor is introduced every time a house is built, for it stands as a beacon of light encouraging others to build. Who would undertake to appraise the advertising value of all the brick houses that stand throughout the world, beautiful, enduring and yet, in solid strength "ageing toward youth?"

The Value of Good Will.

Clearly this is all part of your good will. It has seemed to me that the makers of brick have never begun to realize how favored they are among the sons of men. In nearly every other industry the temporary, often the ephemeral character of the product, is a hazard and at times a definite liability. The automobile maker may turn out a car that requires so much repair and replacement that he will seriously handicap future sales. The shoes we wear may be so short lived as to gain ill will, rather than good will, for their maker. But there is no such debit entry in the ledger of the maker of brick. Paradoxical as it may sound, the only one that is likely to be injured by the durability of brick is the brick-maker himself. As I said twelve years ago in Rochester, speaking as a publisher: "Our printed page is a descendant, through long evolution, of the papyrus of the Egyptian, but your brick and the brick of the Egyptian are essentially the same." And then I added, "It would be strange indeed if a material that had changed so little from early Bible times until now had not bred a sort of unconscious conservatism in its makers." But happily this conservatism, while it delayed unduly the beginning of your co-operative advertising, served to keep it going, once it had begun. Your campaign has been continuing, like the life of brick, and so it should be to the end of the chapter.

Consider for a moment the advantages of continuing and the disadvantages of quitting—although I realize that the latter alternative isn't even being considered. There are four clear advantages in going ahead—the protection of the great body of good will for brick which your co-operative campaign has thus far created; the actual sales effected for houses soon to be built; the future sales for houses you are building in people's minds; the permanent value of every brick house as an advertisement for brick. These advantages are cumulative in good will, always and everywhere, because the product you sell possesses great merit.

What convincing witness to the cumulative value of advertising is borne by a product that has the shape and size of a brick—Ivory Soap? So great is the good will created for Ivory Soap by its merit and its advertising that it "floats" on the high tide of prosperity in good seasons and bad. Of course, an article of daily household use differs greatly from a material that goes into the permanent construction of houses—but the principle of cumulative value is the same.

As to the disadvantages that would come from quitting, these might also be placed in four heads: the cancelling of the protection for the good will investment you have made—(of course the investment would not all be lost but it would be seriously impaired in this age of aggressive competitive selling); the shrinkage in actual sales that come through your advertising; the shrinkage in potential sales made in people's minds, which would be marked and sudden when the educational advertising that created them was stopped; the reduction in the permanent advertising value because of a reduced number of brick houses, through this shrinkage in actual and potential sales.

But it seems to me that the most far-reaching loss from

quitting would be in the general effect on the public mind. Wouldn't such action of an organized industry be looked upon as a vote of lack of confidence in its own product? This would be the inevitable impression, I am convinced, because an industry, speaking as a corporation unity, has an authority that far surpasses an individual advertiser or of advertisers; so if its voice should become silent the public would be convinced that it was unable to hold its own against competitors. Of course the makers of a building material with the great merits of brick, will never seriously consider retiring from the field and leaving it uncontested, before the aggressive selling campaigns of the lumber and the cement associations.

The Value of Co-Operation in Industry.

At this point in my address I think I should give you a brief survey of various co-operative campaigns that have been carried on by whole industries. If they are continuing, with every evidence of success, it would seem reasonable to believe that the same result will attend the brick campaign as it goes forward. I had this survey prepared by members of the Quality Group, which, as you know, is made up of six competing magazines. The Quality Group itself is a shining proof of the value of co-operation to all its members. Although keen competitors in the same field for national advertising, they have found that they can best serve both advertisers and themselves by working together. The newspapers, through their National Newspaper Advertising Bureau and the Business Press, have similar co-operative organizations and all have been highly successful, showing that the principle of co-operation among competitors is a sound one in every field in which it has been tried.

In this era of co-operation it is most natural that the members of any industry should be disposed to get together and work out common tasks in a common way. Clearly there is no common task, of more fundamental interest to any industry, than that of making, of stabilizing and of enlarging the market for its product. In performing that threefold service, advertising has come to have a large and sure place. The most hard-headed business men, who challenge every cost and make it render a full 100 per cent in service, have come to be among the most convinced believers as to the power and value of advertising as a force in making markets and aiding in distribution.

The advertising of industries was an inevitable outcome from the organizing of industries into association. These associations have undertaken to carry forward common undertakings and, in the forefront of these, has always stood—and always will continue to stand—the matter of markets. One of the first of the co-operative advertising campaigns was that of the lumber people. The Cypress Association has now completed twelve years of continuous advertising. I asked the Crosby Agency of Chicago, the able organization that has directed this campaign and a number of similar campaigns, what it thought were the chief purposes back of association advertising. And it is interesting to call your attention to their reply, which was this:

"There are three chief purposes—the first is to promote a better sort and degree of co-operation among the members of the industry advertised. The second is the development of such sales pressure as can be used upon the various distributors of such products, impelling them to greater activity on its behalf. The third is the stabilization of the broader markets for such product through the development of public recognition of its service value."

You are probably quite as familiar with co-operative advertising of industries as I am, but it will be worth while for both of us to make a brief reference to some of the most important of these campaigns, and I am sure we will all be greatly impressed with their variety and range. For example, what could be further removed from a building-material campaign than the one carried on by the Society of American Florists? The product sold by you brick manufacturers is everlasting but the roses sold by the florists are, in the truest sense, ephemeral. And yet advertising has served you both, showing that it must have some essential principle

of appeal of the widest application. The success of the florists' organized campaign has been tremendous. Their slogan, "Say It With Flowers," has brought itself into the language as a common expression. I cannot imagine a more difficult campaign to make a success of than this florist campaign. It undertook to persuade people that they could order flowers from a member of their association, say in New York, to be delivered in Denver or Portland, Oregon, upon a telegraphic order, by some member of the society in those cities. It has been found that a very large direct business has resulted from this campaign, together with the broad trade-building service which it has rendered in broadening the market for flowers in many different ways.

Another co-operative campaign that set for itself a seemingly impossible task has been that from the Holstein-Friesian Association. When it started a number of years ago, the Holstein cow was looked upon as a quantity milk producer but she had no particular reputation in the world of live-stock. But, largely through the educational value of the advertising campaign, the Holstein has come to have a place of unquestioned standing, both as a dairy and a beef animal.

Instances of Successful Advertising Campaigns.

There are now literally scores of co-operative advertising campaigns. The very fact of numbers of continuity would seem to establish beyond any question the value of co-operative advertising. On the face of it, it would seem flying in the face of reason to hold that the thousands of people in all sorts of industries who undertake co-operative advertising would continue to do it if it were not proving to be profitable. The example of the Citrus Fruit Growers of California is known everywhere. Here was the rather plebeian orange, a fruit without any particular character or reputation, that went forward under the alluring title of "Sunkist" and not only spread its markets by leaps and bounds, but has held and enlarged them year after year. The raisin growers have done the same thing and so have the olive growers. Even the fish swim to our tables on the stream of co-operative advertising. It would undoubtedly tax your patience and keep you indoors and away from the friendly golf links if I should undertake even to give the briefest sort of summary of the various co-operative campaigns that have been and are being carried forward.

But I know you must be deeply interested, of course, and primarily interested in what building material advertisers have done along co-operative lines. So it may be worth while for me to talk about these in some greater detail. You will recall that when the Red Gum Manufacturers' Association began its campaign a number of years ago, this wood was really unmarketable—largely because its quality was unknown. As the result of the advertising, Red Gum has come to be one of the most highly valued woods for interior trim that there is. But knowledge of its qualities had to be borne into human minds before the red lustre of the beautiful wood could add a fine quality of distinction to hundreds of homes. I recall distinctly, at the time this campaign was begun, having heard that one of the chief reasons for undertaking it was to build up, through carrying it on, a spirit of team-play and co-operation among the Red Gum lumber people themselves. And I have learned that this particular result was achieved as a by-product, along with the principal objective which was, of course, making a larger market for Red Gum for interior woodwork.

About the time the Red Gum campaign got under way, the Southern Cypress Manufacturers' Association started their advertising. As I have already stated, this has been one of the most successful of all co-operative campaigns. But these two pioneer enterprises, starting, oddly enough, in the South—which had been supposed to be somewhat backward in an appreciation of advertising—have had the honor paid them of being followed by many similar campaigns. Just to mention the list makes an impressive roll-call. There are:

The White Pine Bureau, North Carolina Pine Association, Great Southern Lumber Company, Southern Pine Association, Arkansas Soft Pine Bureau, American Oak Manufacturers'

(Continued on page 72.)



PAVING BRICK VARIETY SIMPLIFIED.

THE NATIONAL PAVING BRICK Manufacturers' Association in co-operation with the Department of Commerce of the United States and through conference with a number of organizations has been doing some splendid work toward eliminating useless sizes and varieties in paving brick and simplifying standards reduced to the smallest practical number.

At a meeting held in November with quite a representation from the paving brick industry as well as a dozen or two organizations of engineers and business people some splendid progress was made in reducing brick standards in the course of which paving brick varieties were reduced from 63 to 21 first, and then there was some earnest work to see how many of these 21 could be eliminated, and 10 more were cut out, reducing the number of standard varieties to 11 and number of sizes to 4. The sizes and varieties retained being as follows:

3½ inch by 4 inch by 8½ inch
 3 inch by 4 inch by 8½ inch
 3½ inch by 3½ inch by 8½ inch
 3½ inch by 3 inch by 8½ inch

The varieties, therefore, that would be retained are as follows:

Plain Wire-cut Brick (Vertical Fibre Lugless)

3 inch by 4 inch by 8½ inch
 3½ inch by 4 inch by 8½ inch

Repressed Lug Brick.

3½ inch by 3½ inch by 8½ inch
 3½ inch by 4 inch by 8½ inch

Vertical Fibre Lug Brick.

Width	Depth	Length
3 inch	by 4 inch	by 8½ inch
3½ inch	by 4 inch	by 8½ inch

Wire-cut Lug Brick (Dunn).

3½ inch by 3 inch by 8½ inch
 3½ inch by 3½ inch by 8½ inch
 3½ inch by 4 inch by 8½ inch

Hillside Lug Brick (Dunn).

3½ inch by 4 inch by 8½ inch

Hillside Lug Brick (Repressed)

3½ inch by 4 inch by 8½ inch

The committee which did this believes that further reduction of varieties is desirable, but that this should follow after further study and after the idea of standardization in paving brick sizes has become well impressed on the paving field. To go too far at the start is likely to arouse such strenuous opposition as to defer for a protracted time the good results which are desired from this conference.

The sizes stated in this report are to be regarded as nominal and subject to the usual variation of ¼ inch in width and depth and ½ inch in length.

PREFERENCE FOR ASPHALT FILLER FOR BRICK PAVEMENTS FOR GENERAL USE IS ANNOUNCED.

Actuated by recognition of the trend in brick pavement construction toward flexible wearing-surfaces, the National Paving Brick Manufacturers' Association at its annual meeting December 6 and 7 in Pittsburgh, unanimously adopted the following resolution announcing its preference for the general use of asphalt filler, as follows:

"Whereas, The National Paving Brick Manufacturers' Association through its contact with the requirements of the paving market, maintained through the members and field engineers of its territorial associations, is increasingly conscious of the trend in engineering design, and construction toward asphalt filler, and

"Whereas, Recent investigation discloses that approximately sixty per cent of all brick pavements laid in 1921 were so filled, and

"Whereas, The association interprets this increased proportion of asphalt-filled brick pavements as indication that the majority of engineers and public officials, using vitrified brick for paving, believe that the use of such filler, under specifications providing quality and method of using according or equal to those of the National Paving Brick Manufacturers' Association, is calculated generally to insure the construction of brick pavements equal in endurance and economy to the endurance and economy inherent to the individual brick as manufactured, and

"Whereas, It is the traditional policy of this association publicly to declare its judgment, from time to time, in respect to purposes which it regards as encouraging the wisest use of public funds for paving purposes,

"Therefore, Be it resolved, That the National Paving Brick

Manufacturers' Association, assembled in annual conference at Pittsburgh, Pennsylvania, on December 7th, 1921, hereby expresses its confidence in asphalt-filled brick wearing surfaces for street and highway paving properly designed and built with acceptable materials and thorough methods. And that this association hereby declares its preference for the asphalt-filled types of wearing surface,

"Provided: Preferment of the foregoing type of brick wearing-surface for general use shall be without prejudice to any other type which may possess peculiar adaption to special local conditions."—Dependable Highways.

EASTERN PAVING BRICK MANUFACTURERS MEET.

The annual meeting of the Eastern Paving Brick Manufacturers' Association was held in New York City, December 13 and 14, 1921, at the Hotel Pennsylvania.

The reports of the officials showed that the past season was very satisfactory. There was a gain in shipments in the eastern territory of approximately 50 per cent. over last year. The attendance was exceptionally good and the "get-together dinner" was enjoyed by every one.

The following officers were elected for the year 1922: President, R. L. Winslow, New York, N. Y.; vice-president, C. C. Blair, Canton, Ohio; vice-president, W. W. Cunningham, Pittsburgh, Pa.; vice-president, J. W. Hall, Baltimore, Md.; vice-president, F. L. Stowell, Olean, N. Y.; treasurer, R. T. Hutchins, Wheeling, W. Va.; secretary and chief engineer, W. C. Perkins, Philadelphia, Pa.

Written for THE CLAY-WORKER.

CLAY PRODUCTS AMPLY PROTECTED IN NEW TARIFF BILL.

THE Senate Committee on Finance has again taken up the work of re-writing the tariff law. It will be remembered that consideration of the new tariff was laid aside by Congress in order to expedite the passage of the revenue revision measure. The latter having now become law, the Senate Finance Committee is again giving its attention to the framing of the proposed tariff—and with the prospect that it is to have a rather lively job of it.

Several features of the measure, as drawn by the House Ways and Means Committee, do not appeal to the country with anything like unanimity. The chief of these is the "American valuation" plan, upon which an interesting fight promises to develop. The American valuation provision is of particular interest to the clay-working industry. This provision is designed to offset the effects of depreciated foreign currency. The bill states that the value for purposes of appraisement shall be "the price on the date of exportation of the imported merchandise at which comparable and competitive products of the United States were ordinarily sold or freely offered for sale in the usual wholesale quantities and in the customary wrappings, coverings or containers, whether holding liquids or solids, to all purchasers in the ordinary course of trade, including all costs, charges and expenses, in the principal market or markets of the United States."

But a few witnesses remain to be heard, and it is stated at the committee rooms that no more testimony will be taken on the schedules relating to the brick and clay trades. Following are the sections of the bill affecting these lines:

"Fire brick weighing not more than 10 pounds each, not glazed, enameled, ornamented, or decorated in any manner, and brick other than fire brick, 10 per centum ad valorem.

"Glazed, enameled, ornamented or decorated brick, 20 per centum ad valorem.

"Brick weighing more than 10 pounds each, and not es-

pecially provided for, not glazed, enameled, ornamented or decorated in any manner, 17 per centum ad valorem.

"Brick, glazed, enameled, ornamented or decorated, 20 per centum ad valorem.

"Magnesite brick, $\frac{3}{4}$ of 1 cent per pound and 10 per centum ad valorem.

"Chrome brick, not glazed, enameled, painted, vitrified, ornamented or decorated in any manner, 20 per centum ad valorem.

"Chrome brick, glazed, enameled, painted, vitrified, ornamented or decorated in any manner, 23 per centum ad valorem.

"Bath brick, 23 per centum ad valorem.

"Tiles, unglazed, ornamented, hand-painted, enameled, vitrified, semi-vitrified, decorated, encaustic, ceramic mosaic, flint, spar, embossed, gold decorated, grooved, and corrugated—and all other earthenware tiles and tiling by whatever name known, valued at not more than 40 cents per square foot, 8 cents per square foot, but not less than 35 nor more than 50 per centum ad valorem; valued at more than 40 cents per square foot, 38 per centum ad valorem.

"Clays or earths, unwrought or unmanufactured, including common blue clay and Gross-Almerode glass pot clay, not specially provided for, \$1 per ton; wrought or manufactured, \$2 per ton.

"Earthenware and crockery ware composed of a non-vitrified absorbent body, including white granite and semi-porcelain earthenware, and cream-colored ware, and stone-ware including clock cases with or without movements, pill tiles, plaques, ornaments, charms, toys, vases, statues, mugs, cups, steins, lamps, and all other articles composed wholly or in chief value of such ware; if plain white, plain yellow, plain brown, plain red or plain black, not painted, colored, tinted, stained, enameled, gilded, printed, ornamented or decorated in any manner, 25 per centum ad valorem; if painted, colored, tinted, stained, enameled, gilded, printed, ornamented or decorated in any manner, 28 per centum ad valorem."

It is not expected that the bill will be reported back to the Senate before January 15, at the earliest.

ALTHOMAR.

GOOD TRUCK SERVICE.

HOW MUCH GOOD are you getting out of your motor trucks? Just what in the way of good service are they rendering you? Keeping a record and comparing notes with the other fellow may give you some light on this subject that would be worth something. The other day a coal dealer who operates a battery of three ton trucks said that he had developed a system by which he was able to make from 16 to 18 trips a day with each truck. Can anybody do anything like that in the brick business? It means making a loaded trip and the return trip and loading and dumping all inside of half an hour. This coal man does it because he has facilities for loading which will enable him to weigh a load out in 7 minutes, and at the delivery end he dumps and is away again in 5 to 7 minutes, thus leaving 15 minutes for road travel. Where there is handling of material to be done an extra man is sent to take care of this and the truck is kept on the move.

Can anyone show anything like this in the brick business? If not, just what can be shown in the way of a record of good service with trucks? We have the motor truck now as an important factor in the brick business. The thing to do then is to make the best of it. To develop to the fullest measure of its possibilities of service and in this way we may help cut down the cost of brick and other clay products delivered to the job.

SOME WAYS OF REDUCING THE COST

Suggestions as to Changes in Equipment and Operation That Will Eliminate Much of the Human Element and Shorten Time Required, Thus Assuring a Large Saving and Reducing to the Minimum the Total Cost.

UNDER PRESENT conditions, with the high cost of freight, coal, labor and general overhead playing so burdensome a part, the lowering of the market prices of our commodities is most difficult, although the reduction in price is deemed advisable in many sections of the country in order to create the proper demand. As some plants are operated at present, reduction in price would seem almost suicidal. If that is the case, it is up to the manufacturer to change the conditions so that the reduction in cost will be possible. There are many angles in the business wherein some saving may be made and if each succeeding step from clay pit to finished product is reduced down to the most economical basis, the total saving would be surprisingly large.

No doubt every manufacturer who is progressive and constantly on the alert for new ways and means of perfecting the rapidity of the manufacture in keeping with the making of good quality ware, has adopted some unique methods that would be most helpful to his brother manufacturer and in turn the other fellow could be of much assistance in giving out some of his pet schemes that make possible cost reduction. A liberal exchange of ideas therefore will be of much real service to the trade as a whole and the lowering of prices may be secured with safety and general good to the entire industry.

In time there will be a decided reduction in freight, coal, labor and general overhead, but the conditions prevalent in pre-war days will perhaps never return, or at least if they do the time of occurrence of same will be in the very far distant future. It is rank foolishness for any of us to hold our thumbs in hopes that those old conditions will soon return. We must make the most of what we have, what we can get and what we can do right now.

"Am I receiving the maximum service for the amount of money expended?" should be a question constantly before the manufacturer and this should apply to every angle of the business.

Beginning with the handling of the clay, are you gathering and taking it to the plant as cheaply as you can? How many men are you employing? Couldn't you reduce this number and at the same time supply your plant with the same amount of raw material? Are you using old methods in the digging, or handling? Are you sure that there isn't some labor-saving device that would reduce the clay-gathering item considerably? One man saved, means a considerable amount of money in the run of a year. Of course labor is cheaper now and more men are anxious to get work, but even so, we are not getting war prices now and every cent saved makes for a better margin of profit or the lowering of the price to stimulate demand.

Are you keeping your men busy or do they have to spend half of their time waiting for cars? We know of one plant especially that used a one-track incline from clay pit to storage shed which was several hundred feet distant and after the car was loaded with clay five men stood around waiting for the empty car to come back. This was a distinct loss of practically two-thirds of the men's time. A double track with a constant supply of empty cars on hand to be loaded would have kept these men busy until sufficient clay for running the plant was secured and then the men could have been

put to work at other points in the plant, emptying kilns, distributing coal or doing other necessary work. On this same plant four men could have been eliminated in the clay pit by the use of a digging machine or steam shovel, but even had they not been in a position to buy the new equipment, they could have saved at least two-thirds of the cost in clay gathering. This is not an unusual condition on clay product plants, there is scarcely a clay pit or bank in this country but that some economy could be secured with little or no expenditure of money. Perhaps there are ruts in the road or tramway that make for slower speed of the horses or locomotive; with proper ballast on this road, there might be a saving of much time in the clay hauling and this means a saving in money. Get the twists, crooks, dips and bumps out of the track, line it up and ballast it so the mule or horse can haul four or six tons instead of two. How much time is wasted by a clay car off the track? Wouldn't a new tie and some tamping pay with the assurance of no interruption of the work? What kind of shovels are the men using? Ordinarily a man can lift three times as much with a short-handled shovel as with a long-handled one. Then, too, the condition of the blade may mean difficult or easy work and while these are minor details, they all enter into the cost. If, on the other hand, you use a digger or steam shovel (these are not economical on small capacity plants), are you getting maximum service? How many cars of clay and how many tons are you getting in with one horse? Give us your experience. We will tell you what others are doing with like equipment. Find out if you are getting the proper tonnage and in the proper time allotment. Isn't this worth considering?

There are many labor-saving devices that mean the elimination of several men, not only in the clay pit but in various departments in the plant.

A most unique arrangement for dumping raw material is used on an Indiana plant as shown in two of the illustrations. While this scheme is used in getting clay into gondola cars for shipment to plant some distance away, it could be used in dumping clay directly into clay bin or hopper. By cable and winding drum, the car is pulled up the incline and runs onto a platform on which are two heavy metal loops on either side of the track to catch the wheels and hold them while the force of the car pushes the platform out to the position seen in the picture. The platform and car are held at this point by heavy beams, one loose bolted to the bottom of the trestle work while the other is loose bolted to the top of the braces. (See illustration.) As the raw material drops from the car, the base of gravity switches to a higher point, thus bearing the platform back into place and giving the car the impetus necessary to run it off the platform and down the incline, drawing cable with it firmly fastened to the bottom of the car. A twin system of this type could be used with quite a saving in the clay haulage costs.

Gasoline locomotives are very economical on plants with more than 30,000 capacity. These are great labor savers, and are coming more and more into general use.

Conveying and carrier belts and systems eliminate much labor and speed up the operation of the plant, and the same is true with clay feeders, for they feed the clay automatically

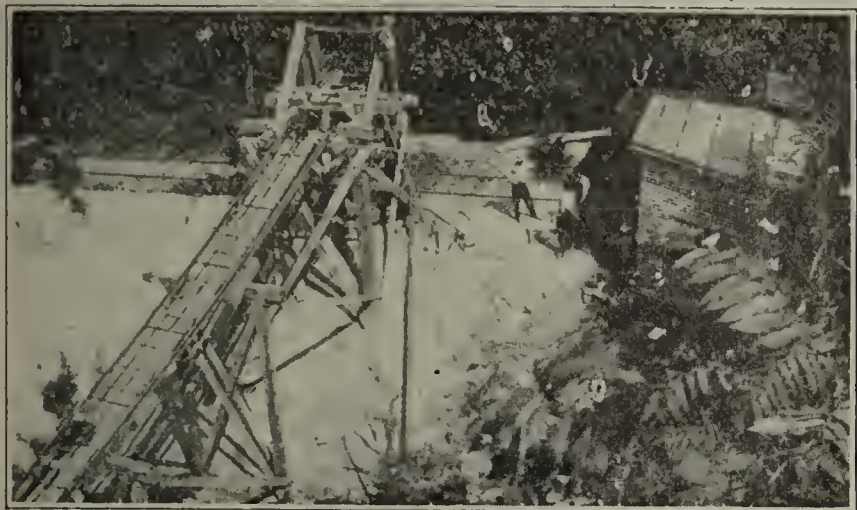
and do away, for the most part, with the human element in the clay preparation department.

Some trucks and drier cars are improperly constructed to render the greatest amount of ease and speed in the transferring work. Are you sure you are giving your workmen the best conditions for speed and good service in this department?

How much time is given to the setting and drying of your ware? Here is a department wherein there is generally a loss when compared to the proper drying practice. Holes through the bricks, when practical, have several advantages; they save clay, prevent laminations, dry more quickly, require less fuel in burning, and have a lower shipping weight, which is important during these days of high freight rates,

on every other flight, the conveyor running at a speed of 60 feet per minute. A one-horsepower motor is used in furnishing power.

Five courses of tile are set in the kiln before the conveyor is used; after this is accomplished the end of the conveyor is pushed through the door of the kiln to the point desired and the tile are set in rapid succession. Three courses of tile are set on top of the five first courses, then the conveyor is raised to height needed. The conveyor will deliver to a point nine feet above floor of kiln. When the back of kiln is filled, the conveyor is drawn out of kiln the distance required and lowered and raised as position in kiln makes it necessary.



Incline to Unique Dumping Platform.



Device for Dumping Clay Cars Automatically.



The Conveyor Paid For Itself in Three Months.



Conveyor For Elevating Brick or Tile Into Kiln.

and then, too, they have the advantage of making a better and stronger wall, for the holes hold the mortar in which it clinches.

Much time is wasted in the loading and unloading of kilns. There are several labor-saving systems now in use that are giving splendid results and reducing the time required in the work.

The portable conveyor for setting brick or tile is being used most successfully in a number of plants. One of the illustrations shows a portable conveyor which consists of a series of flights on sprocket chains, the flights being spaced to suit size of brick or tile—in this instance, tile. In setting small tile the flights are 24 inches apart and tile are placed

In commenting on this labor-saving device, the owner stated that he would not do without the conveyor, that it saved him two men and five hours in the setting, requiring little power and making the working conditions for the men more desirable, since it absolutely eliminates lifting and tossing. The machine paid for itself in three months.

In setting a forty-foot kiln in the old way, four men, working two days, were required to set by hand. With the conveyor, only two men are required and the setting time is shortened five hours. With wages ranging from 35 to 40 cents an hour and even higher in many plants, the saving in this department amounts to considerable in the course of the year. Figuring at the minimum of 35 cents an hour, eight

hour day, the saving on this machine in labor alone would be \$5.60. But remember five hours are saved in setting by machine with only two men, for formerly it required four men two full days in the setting, so that added to this amount should be the cost in labor of four men for five hours every other day at \$3.50 per day, making total daily saving of \$9.10, to say nothing of value of quicker work and better working conditions for the men.

On the average plant which shuts down four months during the year, the saving would amount to considerably over \$1,400, figuring a liberal amount for power, which is inappreciable. This means clear profit with a much improved labor condition. This is taking into consideration the use of only one conveyor. On larger plants where several kilns are set daily and extra conveyors are used, the saving will be proportionately greater.

It is labor-saving devices of this kind that we wish to bring more forcibly to the attention of the clay products manufacturers of the land, for in the adoption of these labor saving methods, the business in general can be placed on a more thriving and profitable basis with less dependence on the human element, so burdensome and vexatious to the plant owners and operators today.

Many of the latest labor-saving devices will be on display at the National Brick Manufacturers' Association convention Indianapolis, Claypool Hotel, January 23 to 27. The entire eighth floor of the hotel will be given over to exhibits by the leading clay machinery firms of the country. Then, too, several of the papers to be read and discussed at the convention will be on labor-saving devices and methods of reducing cost. Every clay product manufacturer will find much of interest to him in the convention proceedings and the week spent will prove a most profitable one in every sense of the word.

Then, too, don't forget the big surprise in store for you. A new idea, or rather a new process, which will revolutionize the common brick industry.

\$51,000 BRICK CONTRACT AWARDED IN WASHINGTON.

THE largest brick purchases recently made in the National Capital have just been consummated here, over 2,000,000 red construction brick, at \$41,000, having been contracted for to complete the large Eastern High School building in the Capitol Hill section of the city. The United Clay Products Co., of Martinsburg, W. Va., with offices here in the Munsey building, are to furnish 1,250,000 brick at \$27,500, while the Hudson Cement & Supply Co., New York, got the contract for 750,000 brick at \$13,500. Deliveries are to begin at an early date.

Senator Frank B. Willis, Ohio, has presented in the Senate a resolution adopted by the Sanitary Potters' Association at Pittsburgh, Pa., composed, among other members, of the Horton Pottery Co., Chillicothe; Sanitary Specialty Co., Columbus; Standard Sanitary Manufacturing Co., Tiffin; all in the State of Ohio, favoring the retention in the permanent tariff bill of the American valuation plan. The resolution was referred to the Senate Committee on Finance.

C. A. Hammett Construction Co., brick and tile manufacturers' agents here in the Woodward building, have secured the big contract for light-face brick for the new Hamilton Hotel now being constructed at Fourteenth and K streets. This is one of the largest brick contracts awarded here for some time.

Henry E. Stringer, general manager of the Virginia Brick Co., with offices in the Colorado building here, told the Washington Rotary Club, at its weekly dinner on January 5, just what a brick is. He not only told them, but he showed them with the aid of motion pictures. It was the "say it with

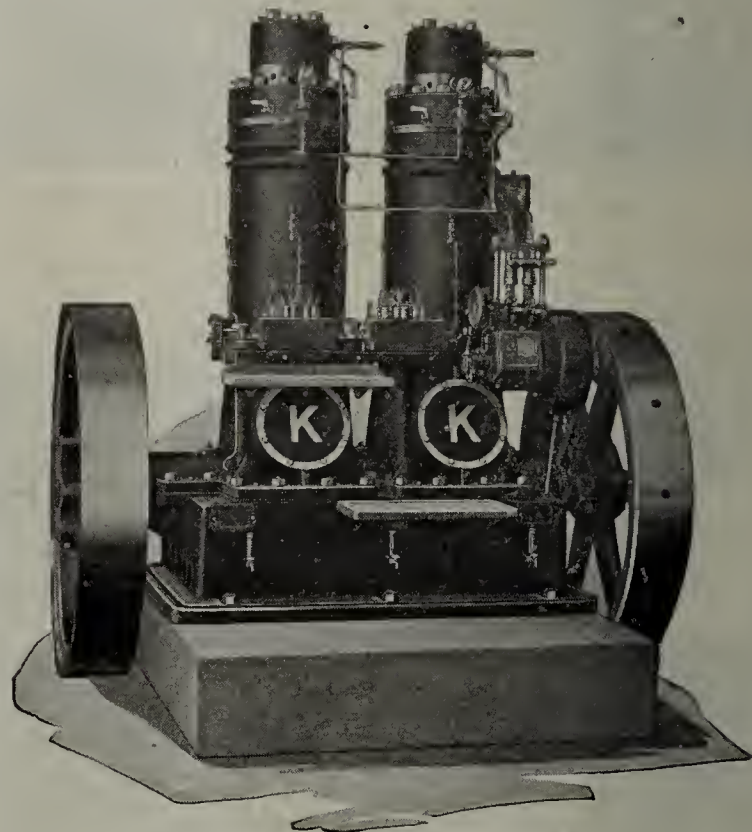
bricks" day of the club. Mr. Stringer delivered a most interesting lecture on the development of the brickmaking industry, which traced the history of building with bricks from 10,000 years ago to the present day. The decorative schemes which can be accomplished with bricks were especially emphasized by Mr. Stringer, who showed pictures of mansions and public buildings which brought out the beauty which can be achieved through the use of colored bricks. He also exhibited a picture film of a brick manufacturing plant in operation, showing the transformation of clay and shale into finished bricks.

ALTHOMAR.

LOW COST POWER EQUIPMENT.

THE ANDERSON FOUNDRY & MACHINE COMPANY of Anderson, Indiana, exclusive manufacturers of the well-known Berg Brick Press, and whose ad has appeared in *The Clay-Worker* for years, is now entering its fiftieth year as a successful business concern.

The original concern was the Anderson Foundry & Machine Works, established in 1872. Under a reorganization effected in 1919, the capital of the company was increased to \$1,200,000, the name changed to that used at present, and the size of the plant doubled.



Latest Model Anderson Oil Engine.

Aside from being manufacturers of brickmaking machinery, this company is a pioneer in the development and manufacture of oil engines, and without doubt, owing to the nominal cost of operating this type of power, this article should be interesting to readers of our magazine as the power problem has become a vital point with all industries, and one that is causing much concern on account of high cost of operation.

Their present engines being offered to the trade are known as Type H and Type K designs and are the results of a cumulative development extending over twelve years time.

Anderson Oil Engines were originally of the one cylinder horizontal type. This was discarded for the present vertical design for which the makers claim many advantages, principal among these advantages are even wear on cylinders, lower fuel consumption, little or no smoke from exhaust, less lubricating difficulties, no water in the mixture, even cooling, less floor space and smaller foundations.

The latest model Anderson engines are made in nineteen sizes, ranging from 15 to 330 horsepower.

Among the arguments advanced for the installing of this type of power is the utter simplicity and rigid construction of the engine, its convenience of operation and no standby losses when not in use.

It is common knowledge among engineers where a simple steam engine is in service that about 60 per cent of the initial heat energy is thrown away in the exhaust steam, 30 per cent in chimney gases (smoke) and another 6 per cent in friction losses, thus only about 4 per cent of the power value of the fuel consumed under the steam boiler, whether it be coal, wood, oil or any other fuel is realized in power on the steam shaft. The best that can be expected from a simple steam plant in best working order is 4 to 5 per cent thermal efficiency, while the oil engine in every day service can readily obtain in the neighborhood of 25 per cent thermal efficiency.

It is further contended that the oil engine is just as reliable as a steam plant to say nothing of the many steam engine inconveniences that are not encountered in oil engine operation such as handling coal, wood or other fuel two or three times, hauling out ashes, keeping up boiler, renewing grate bars and smoke stacks every two or three years.

When one stops and thinks that it requires over 100,000 British Thermal Units to produce one horsepower through an 80 h.p. simple steam plant, and it is claimed an Anderson engine will do this same work on approximately 10,000 units, the savings are obvious. Fuel oil can readily be obtained in most all sections with a general average of 19,300 British Thermal units to each pound to draw to for power, and it is claimed by the manufacturers that on every pound of this oil their engine will produce 1.82 horsepower hours or 1.21 kilowatt hours.

One of the most persuasive arguments advanced by the Anderson Company is the fact that they offer a guarantee to place 9.12 kilowatt hours which is equal to 13.65 horsepower hours on the switchboard with only a gallon of the cheapest black fuel oil.

Power is far more important than many operators realize. The saving of one cent per kilowatt hour alone, on the total output of a 100 kilowatt generator is continuous full load service would mean an increase of approximately \$8,760 in the annual net earnings of any plant, and by reducing existing cost of operation a fraction of a cent per kilowatt, might span the gap between prosperity and adversity or convert a dead investment into a dividend payer.

About the only power that could compete with this on basis of cost would be water power with the ever-present possibility for the latter of shut downs in dry weather or severely cold weather.

Just a word about the engine itself, in appearance it will be noted from picture the pleasing lines of its makeup. The engine is fully enclosed, so no oil can be thrown, and all moving parts protected from dust. The journal bearings are of the removable shell type, babbitted with high-pressure metal, and are readily removed, adjusted or replaced, each journal being flooded with lubricating oil while engine is operating, thereby assuring perfect lubrication without waste. The crankshafts are more than half the diameter of the cylinder bore, they are forged from a solid billet of high carbon open hearth steel, and are as highly tempered and machined as is possible to make them. The cylinders are made of special mixture of iron and steel and chilled in the bore to a depth of one half in ch while being cast to assure the hardest material on the inside. The piston lengths are twice the diameter of cylinder bore, thus assuring long wearing surfaces and reducing bearing pressures against cylinder wall to approximately not over six pounds per square inch. There are two fly wheels used, which prevents overloading of the fly wheel end of the shaft as is common in single wheel engines.

The governor mechanism is entirely enclosed, yet readily accessible, all working parts running in a bath of lubricating oil. It is of the automatic cut-off type admitting fuel into the combustion chamber in direct proportion to the load being carried, with this method an accurate regulation is obtained and a run-away is absolutely prevented. Any sudden changes of load such as occurs in brick plants are taken care of by the governor without any adjustment, as a matter of fact these engines are guaranteed to govern themselves to such a degree of accuracy that they are being used in the highest grade municipal lighting plants.

While you are attending The National Brick Manufacturers' Convention, Indianapolis, Indiana, January 23 to 28, make it a point to visit Anderson, Indiana, which city is only thirty-six miles northeast of Indianapolis on Big Four Railway and Indiana Union Traction lines—cars every hour. The Anderson Foundry & Machine Company extend to you a cordial invitation to visit their works, where you can see Anderson Oil Engines and Berg Brick Presses being manufactured and in operation.

NORTHERN "CERAMIC" LIGHTS.

THAT THE GOVERNMENT of Saskatchewan is interested in the development of the clays, and the success of the clay manufactures within the bounds of the province, was clearly demonstrated at the recent exhibition at Saskatoon and Regina.

A large expenditure of money was made in collecting and preparing samples of as many of the undeveloped clays from the province as was possible, and in addition, each manufacturer was free to submit, at Government expense, a full line of his products, with specifications as to the method of their display, such as bond, joint, mortar color or other means of setting forth the merits of their respective wares.

The manufacturers were very enthusiastic over the enterprise and promptly availed themselves of the opportunity of having their products placed before the thousands that were sure to attend the fairs.

Each firm was free to have distributed such printed matter as they wished to place in the hands of those in charge of the Government booths. In addition the province prepared and distributed a small bulletin setting forth the many merits of clay products followed by short notes of interest relative to clays.

That the work was a success and proved educational to the public was clearly shown by the interest taken, and the thousands of questions asked, the furnishing of manufacturers' names and the compiling of a list of prospective builders which was later sent to the several clay companies.

Strange as it may seem there were farmers that had moved to Saskatchewan from the corn belt of Illinois, from Ohio, Indiana, Iowa and other states, that had used in those states, and were familiar with the benefits to be derived from the use of drain tile and clay silos, but were not aware that they could obtain or have made for them within the province, similar wares. The immediate result of their newly gained knowledge was the placing of several orders.

In this connection there was found another side to the same matter, it brought the manufacturers face to face with the fact that they had, in a large measure, been at fault through not advertising their wares, that the public might know.

The display of the raw or undeveloped clays was largely that of a collection of the Saskatchewan pottery and stone-ware clays, but for the sake of comparison, English and American clays of similar class were shown.

In view of the success of the undertaking during the past year it is the intention to enlarge upon same in many ways for the exhibits of 1922.

OFFICIAL ANNOUNCEMENT



THIRTY-SIXTH ANNUAL CONVENTION TO BE HELD IN INDIANAPOLIS JANUARY 23 TO 28, 1922.

THE THIRTY-SIXTH Annual Convention of the National Brick Manufacturers' Association will be held at Indianapolis, the week of January 23 to 28. Miss Indiana beckons to every clayworker in the land, and with her most alluring smile assures every visitor a real Hoosier welcome which will make the occasion the event of the year in organization work, and one long to be pleasantly remembered.

Those who participate will acquire information and new enthusiasm which will make possible a larger measure of success in the season to come than otherwise would be possible. We are at the dawn of a new era of prosperity which will come more quickly and more surely if the representative men in the industry lend their efforts in a whole hearted way and co-operate one with another for the upbuilding of the industry.

The convention will be a source of real pleasure and profit to every participant. There is much real work to be done and the program provides for a busy time. As Rotarians say, "He profits most who serves best." In other words you get out of any effort or undertaking in proportion as you contribute to it. Those who come and take an active part will profit most.

How be it, it will not be all work and no play, that makes Jack a dull boy. There will be social features such have always characterized N. B. M. A. gatherings, which will add to the friendship whether old established or newly formed, and which leaven the loaf of hurtful competition. Friendly competition promotes, unfriendly competition destroys. Take the good, avoid the bad. Come to the convention and bring your neighbor and competitor with you and the current of business and life itself will run stronger and smoother in the months to come.

Reduced Railroad Rates.

Reduced railroad rates have been granted from all sections of the country east of the Mississippi River and some sections of Western States, including Missouri and Kansas, by the Central Passenger Association and concurred in by the Trunk Line, New England and Southeastern Passenger Associations on the certificate plan. Each and ALL who come should pay full fare to Indianapolis and TAKE A CERTIFICATE for same from the ticket agent. This when properly vised by the railroad official who will be in attendance for the purpose will entitle the purchaser to a return ticket at one-half the fare paid going, if there are 350 certificates. For the latter reason every member is requested to be particular to take a certificate. They cost nothing, not a penny, and if the members will each take a certificate, even though he may contemplate returning by a different route, the requisite num-

ber will be obtained and all who want to take advantage of the reduced rate will be able to do so. If the certificate is not used, the purchaser will be out nothing, so DO NOT FAIL TO TAKE A CERTIFICATE FOR EACH FARE PAID.

The Claypool Hotel Headquarters.

Headquarters during the convention will be at the Claypool Hotel, which is famous for its unexcelled facilities for convention functions. Its beautiful lobby, its great banquet hall, known as the Riley Room in honor of the departed Hoosier poet, and the convention halls give it high rank for all business and social gatherings of whatever character. The Claypool is a modern fireproof hotel of brick and steel construction. It guests are safe and are afforded every modern convenience and comfort. The rates are reasonable, ranging from \$2.00 up on the European plan. The hotel is but a short walk from the Union Station from which all railway trains arrive and depart. The Claypool is in the very heart of the business district in which are also located the principal theaters. Indianapolis is noted for its moving picture houses. Since the last Indianapolis convention a new theater has been added to the list, Loew's State. It is one of the finest film palaces in the nation and is located two blocks east of the Claypool.

Convention Hall.

The sessions of the convention will be held in the assembly room of the hotel on the eighth floor of the Claypool Hotel. That floor will be occupied almost exclusively by the trade "missionaries," who will keep open house throughout the week, distributing their souvenirs and impart to all comers full information as to the latest and most improved labor-saving devices intended to smooth the path of brick and tile men in their efforts to produce better and more ware at less cost than they have heretofore been able to do.

The N. B. M. A. Official Bulletin.

The time and place of meetings of the various organizations and the room numbers of the trade "missionaries" will be given in the N. B. M. A. illuminated bulletin in the main lobby of the Claypool.

The Smokerette.

The informal reception and entertainment tendered by the Hoosier Committee on Entertainment will occur Wednesday evening in the Riley Room of the hotel. Delegates and those accompanying them, including the ladies, will participate. There will be various entertaining stunts and music galore, followed by dancing if that is desired by those present. The Association badge of membership in the only requisite of admission.

The Annual Banquet.

The big social event of the week, the annual banquet, will occur Thursday evening. As in former years, it will be a subscription dinner under the auspices of the Executive Committee of the N. B. M. A., and the Local Entertainment Committee. It was anticipated that President Harding and Secretary Hoover would be with us at that time, but the continued labors incident to the Disarmament Conference prevent them from leaving Washington. It is now expected that Vice President Coolidge will honor us with his presence. The other guests of honor will be Honorable ex-Senator Albert J. Beveridge, who will respond to a toast, as will also Governor McCray, Mayor Shank and the reigning Hoosier poet William Herschel. We will also have as our guests Honorable Albert B. Anderson, Judge United States District Court, ex-Mayor Charles Bookwalter, toastmaster at the last Indianapolis convention, W. D. Gates, Chicago, and others, some of whom will speak. Members are expected to bring their wives, daughters

and sweethearts as the case may be. Full evening dress is in order, but not essential.

Entertainment of Ladies.

A special committee having charge of the entertainment of the visiting ladies will make the event a happy one for them. A useful and pretty souvenir, a bit of porcelain, will prove a delight for "a thing of beauty is a joy forever," especially when as in this case it is an article of utility. It is a product of the Ohio Pottery Company, of Zanesville, Ohio, the first American pottery to make hard porcelain equal if not superior to foreign products.

Souvenir Badge and Number Button.

A beautiful souvenir badge, something new and unusual, together with a number button will be presented to each delegate and guest with the compliments of the local committee.

A special program of the local events will be distributed by the secretary of the local entertainment committee at Headquarters' room.

N. B. M. A. Sessions Open to the Public.

All sessions of the National Association are open to the public. Those interested in the discussion of the various questions pertaining to better building and kindred themes will be welcome.

Those interested, directly or indirectly, in claywork of any character or the use of clay products of any sort are invited to join the Association and participate in the proceedings of the convention. Members and their families or friends who may accompany them will be expected to participate in all the entertainments and proceedings.

Rules of Procedure.

All formal resolutions shall be presented in writing.

At the close of each essay or address an opportunity will be afforded for a full discussion of the subject under consideration.

No papers or essays not included in the regular program will be heard unless previously submitted to and approved by the executive committee.

Papers and addresses delivered during the convention become the property of the Association, and, in accordance with the rules of the Association, may not properly be given out for publication except by or through the secretary.

The proceedings of the convention will be copyrighted to prevent piracy, but the greatest publicity will be given all the convention papers and discussion at the proper time, after the report is complete, not before, when copies of any and all papers and discussions may be had free of charge on application to the secretary.

N. B. M. A. Program.

First Session, Wednesday, January 25, 2:00 P. M.

Call to Order, President W. E. Dunwody, Macon, Ga.

Opening Prayer, Rev. Frank S. C. Wicks, Indianapolis.

Address of Welcome, Hon. S. L. Shank, Mayor of Indianapolis.

Response to Address of Welcome, L. L. Stephenson, Lovick, Ala.

President's Annual Address—W. E. Dunwody, Macon, Ga.

Treasurer's Report, John W. Sibley, Birmingham, Ala.

Secretary's Report, Theodore A. Randall, Indianapolis.

Election of Officers and Members of Standing Committees.

Installation of Officers.

Report of Committee on Technical Investigation, Dr. Albert V. Bleining, Newell, W. Va.

"Heavy Clay Products"—Ross C. Purdy, Secretary American Ceramic Society, Columbus, Ohio.

Discussion, led by W. D. Richardson, Columbus, Ohio.

Second Session—Thursday, 9:30 A. M.

"Drying Brick with Waste Heat from Up-Draft Kilns"—A. V. Sturgeon, Suffolk, Va.

Discussion, led by M. E. Gregory, Corning, N. Y.

"The Transmogrification of the Common Brick." (Illustrated)—Major E. Gates, American Terra Cotta and Ceramic Co., Chicago, Ill.

Discussion, led by Jotham Post, East Williston, N. Y.

"Engineering as Practically Applied to the Brick and Tile Industries"—Frank D. Chase, Chicago, Ill.

Discussion, led by I. M. Justice, Dayton, Ohio.

Third Session—Thursday, 2:00 P. M.

"Expedition in the Cooling of Kilns." (Illustrated)—Marion W. Blair, Murphysboro, Ill.

Discussion, led by George H. Lacey, Indianapolis, Ind.

"Handling of Wet and Limey Clays in the Manufacture of Drain Tile." (Illustrated)—George M. Krick, Decatur, Ind.

Discussion, led by D. C. Haeger, Aurora, Ill.

"Importance of Subdrainage in Road Construction." (Illustrated)—Will P. Blair, Vice President National Paving Brick Manufacturers' Association, Cleveland, Ohio

Discussion, led by J. A. Reeves, Streator, Ill.

"Marketing Paving Brick"—James R. Marker, Engineer and Secretary Ohio Paving Brick Manufacturers' Association, Columbus, Ohio.

General discussion, led by H. C. Adams, Danville, Ill.

"Making Brick in Indiana." (Illustrated)—G. B. Luckett, Crawfordsville, Ind.

Fourth Session—Friday, 9:30 A. M.

"Lessons of Fire Tests." (Illustrated.)—S. H. Ingberg, Bureau of Standards, Washington, D. C.

Discussion, led by H. H. Stafford, Augusta, Ga.

"Importance of Proper Appraisal of Clay Properties"—H. B. Hall, American Appraisal Co., Milwaukee, Wis.

Discussion, led by Ellis Lovejoy, Columbus, Ohio.

"Advantages and Disadvantages of the Tunnel Car System for Burning Brick and Tile." (Illustrated with Moving Pictures and Lantern Slides)—Wm. Hanley, Jr., Bradford, Pa.

Discussion, led by M. H. Donnelly, New Britain, Conn.

"Making Brick in St. Louis." (Illustrated)—J. Stocke, Jr., Progress Press Brick and Machine Co., St. Louis, Mo.

Discussion, led by Wm. C. Mitchell, Superior Press Brick Co., St. Louis, Mo.

Fifth Session—Friday 2:00 P. M.

"Making Brick and Tile in Illinois and Missouri." (Illustrated)—Eben Rodgers, President American Face Brick Association, Alton, Ill.

"Economical Production and Handling of Building Brick." (Illustrated by moving pictures)—Raymond C. Penfield, President American Equipment Co., New York, N. Y.

General discussion, led by Douglas Stevens Danville, Ill.

"Why is a Sewer Brick?"—H. T. Shelley, Manager Eastern Clay Products Association, Pittsburgh, Pa.

Discussion, led by C. C. Blair, Youngstown, Ohio.

Reports of Committee on Resolutions.

Miscellaneous Business.

(Note.—In addition to the foregoing addresses and papers, various questions pertaining to brickyard practice will be discussed. Any member desiring information on any specific detail of the business may obtain same by submitting questions in writing to the Secretary.)

Rotary Day.

Tuesday is Rotary Day in Indianapolis and convention week. The speaker will be our own Treasurer John W. Sibley, Birmingham, Ala., who will speak on Rotarianism as Viewed

by a Brick Manufacturer. All visiting Rotarians will be expected to attend the luncheon and to take with them such of the visiting brick men as do not happen to be Rotarians but want to hear "Massa" John orate. Each may pay for his own luncheon ticket, the price being 75 cents per. Luncheon is served at 12:15 in the Riley Room of the Claypool Hotel, and the club adjourns at 1:30.

Other Meetings.

Any of the local associations desiring to do so may hold meetings Tuesday. A suitable convention hall and other conveniences will be provided free of charge in the Claypool Hotel if proper notice is given to Secretary Randall.

The Indiana-Illinois Division of the American Face Brick Association will meet Wednesday morning at 10:00 o'clock in the Assembly Hall of the Claypool Hotel.

The Indiana Paving Brick Manufacturers' Association will hold one or more meetings during the week. Announcement of same will be made on the N. B. M. A. Bulletin Board in the lobby.

The Indiana Drain Tile Manufacturers' Association will participate in the Thursday afternoon session, and hold other meetings which will be announced in the N. B. M. A. Bulletin.

Those desiring further information as to requisite of membership in the N. B. M. A., formal program, etc., are requested to communicate with the Secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,

W. E. Dunwody, President.

Theodore A. Randall, Secretary.

ANNOUNCEMENT AND PROGRAM OF THE CONVENTION OF COMMON BRICK MAKERS, ST. LOUIS, JANUARY 30, 1922.

ARRANGEMENTS ARE COMPLETE for the Third Annual Convention of The Common Brick Manufacturers' Association of America. St. Louis is the convention city and the sessions will be held at the Hotel Statler. The Board of Directors have a meeting on Monday morning, January 30, and the opening session of the convention is at 2 p. m. on that day. President Chas. H. Bryan of Detroit will preside. The welcoming address will be given by Major H. W. Kiel of St. Louis, who is a brick mason and a great friend of brick construction. The response to the Address of Welcome will be made by John F. Reynolds, North Haven, Connecticut, one of the directors of the Common Brick Association.

The principal address of the opening session will be delivered by Josiah Kirby, president of the Cleveland Discount Company, Cleveland. This twenty-million-dollar corporation is the second largest mortgage company in the United States. Mr. Kirby, during the past few years, probably has loaned more money for construction purposes than any other individual in the country. During the past year he purchased one sky-scraper in the city of Cleveland, built by John D. Rockefeller, and his company has just completed the erection of the tallest building in the Ohio metropolis. As a builder and a financier of building, Mr. Kirby has few equals. He will speak to the brick men upon "The Construction Outlook for 1922."

On Tuesday there will be two sessions beginning at 10 a. m. and 2 p. m., with an informal dinner at 7 o'clock in the evening. An address of unusual interest will be given on Tuesday morning by E. Elmo Martin, who illustrates his talk with blackboard drawings. Mr. Martin is retained by some of the largest business houses in the country from coast to coast to speak at intervals to their executives upon the matter of personal efficiency.

Other topics discussed on Tuesday will be Local Adver-

tising, Local and State Organization, Joint Technical Research Work, Technical Work of the Association, National Advertising Program and a talk by W. Knickerbacker Boyd of Philadelphia upon the activity of brick substitutes, which no brick man can afford to miss hearing. The efforts being made at this moment to displace brick as a standard in the building codes throughout the country is most insidious. Mr. Boyd has for two years been doing work for this association in combating attacks of the substitutes.

Although the dinner meeting Tuesday evening is an informal affair, at which both the brick men and the ladies as well as all visitors to the convention will be welcome, there will be presented two addresses. Senator Geo. W. Cartwright, formerly of California, now vice-president of the American Education Association, will talk upon the Relation of Employer and Employee. Senator Cartwright, who is considered one of the most forceful speakers in America today has a new vision as regards this very old subject. He is in great demand as a speaker by Chambers of Commerce and other organizations, and the Brick Association was most fortunate in securing a date with him.

Another speaker is Edward S. Jordan, president of the Jordan Motor Car Company. Mr. Jordan has a reputation in the United States which is unique. He is considered one of the country's greatest merchandisers. He is also one of the country's most efficient advertisers and he comes to St. Louis to tell the brick men about the fundamentals of selling, which apply with equal force to brick and to automobiles. Next to Ford, Jordan is the best known personality in the U. S. connected with the automobile industry. We all know the names of many cars, but we know the names of few men who make these cars. The name of Jordan is outstanding.

On Monday afternoon, Secretary-Manager Stoddard of the association will explain what has been heralded as "Mystery No. 3." This is a new activity which will be suggested to the brick men and the subject will be up for discussion on Tuesday afternoon.

On Wednesday morning the feature will be a talk upon simplified cost accounting by Harry W. Conway, accountant of the Cleveland Builders Supply and Brick Co. It will be recalled that Mr. Carry spoke at the Common Brick convention held at Chicago three years ago, and his address at that time was published and widely distributed. Mr. Carry has prepared a monthly cost accounting blank for the use of members of the C. B. M. A. of A. He will present this simple method of accounting and illustrate its use. Those who have heard Mr. Conway in 1919 will surely feel that his talk alone makes the trip to St. Louis well worth while.

The reports of various committees and elections of directors take place at the morning session on Wednesday. The afternoon session will be devoted exclusively to talks and motion pictures presented by machinery and equipment men. The entire fifteenth floor of the Statler Hotel has already been reserved by the machinery people and one of the largest displays of this kind that has been seen at a convention in a number of years will await the brick men at St. Louis.

The ladies will be entertained with the tea and card parties and theater parties during the convention days.

Special rates to St. Louis and return on the certificate plan. Brick men attending the convention at Indianapolis the week preceding should not fail to take the certificates when they purchase tickets from Indianapolis to St. Louis, as the certificate will entitle you to one-half rate on return trip. All brick men and all others interested in the industry are cordially invited to attend the convention at St. Louis, January 30, 31 and February 1, 1922.

Push the building end of the business along with plan books.

A BIG SURPRISE AND A RARE TREAT!

Is in Store for Every Clay Products Manufacturer
Who Attends the N. B. M. A. Convention,
Claypool Hotel, Indianapolis, Ind.,
January 23-27, 1922



A number of NEW IDEAS will be presented: One in particular will demonstrate new possibilities which will REVOLUTIONIZE THE COMMON BRICK INDUSTRY. This is not a "Get-Rich-Quick" scheme, but an evolution in the trade.

Every brick manufacturer in the land should attend, get full information and see the demonstration, for it will mean an increased demand and consequently a much better price for your product.

HOLLOW TILE MANUFACTURERS TERRA COTTA MANUFACTURERS FACE BRICK MANUFACTURERS

will all be deeply interested in this NEW IDEA and DEMONSTRATION.

Another paper will be of very great interest to every clayworker for it will describe and illustrate some new LABOR SAVING DEVICES which will serve a three-fold purpose—Cut Your Costs, Improve Your Products and Increase Your Capacity.

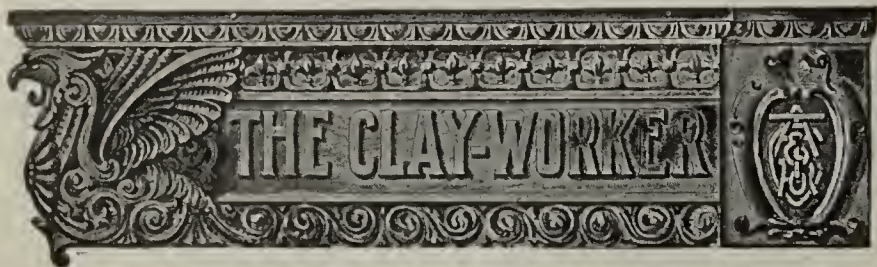
AND there are other important offerings solving troublesome problems that beset the MANUFACTURERS OF BRICK.

DO NOT FAIL TO ATTEND YOU'LL BE SURPRISED!

Reserve your room at the Claypool NOW, for there will be an immense gathering of the clay craft.

Be sure and take a CERTIFICATE from the Railroad Ticket Agent for the fare paid to Indianapolis. It will not cost a penny, and will count one in the total number required for Reduced Railroad Rates.

Mention THE CLAY-WORKER.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.
THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

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Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77. January, 1922. No. 1.

IRELAND IS FREE! PEACE ON EARTH, GOOD WILL TO ALL MEN.

CURRENT COMMENT.

The Young year looks healthy and husky.

* * *

Let it be "Indianapolis Bound" first, then "On to St. Louis."

* * *

The excess profit tax crop will be small, but we still have a tax problem—and burden.

* * *

If there is something you think ought to be said at the big gathering of the clans, why not get up and say it?

* * *

If 1922 doesn't prove to be the biggest year in the structural clay products business we miss a mighty good guess.

* * *

Buttonhole talks are big factors in getting full value out of your convention trip. They help you to gain knowledge and friends.

* * *

There are a lot of people who say what they think who wouldn't be so bad if they would only do a bit of real thinking now and then.

* * *

One good way to find out what the machinery contingent has to offer in the way of new things is to ask them about it—and the chances are you will get an ear full. On to Indianapolis.

* * *

Those who stay at home can read about the N. B. M. A. gathering in the official report, but those who attend and

take a part will have the best time, and get the most out of it.

* * *

Prosperity has been coming around the corner long enough now, let's get it out in the open.

* * *

All signs point to a lot of big construction during the year as well as a big lot of home building.

* * *

Get a certificate when you buy your railway ticket to the convention—so that all may get a reduced rate going back.

* * *

They have taken off the transportation tax, which eases the cost of travel a little bit, but that lower Pullman berth still comes higher.

* * *

Finding fault is such an easy thing to do that there is not much virtue in doing it. But it must be fun, or there wouldn't be so many at it.

* * *

Not only does the advance announcement of the Ceramic annual look good, but you can rest assured that there will be a lot of good things doing on that occasion.

* * *

Better brick at lower cost, and more brick at better profits, may well be the twin slogan for the year. And surely better brick at lower cost will lead to the use of more brick in home building.

* * *

There are some international financial problems to be solved, but let's let the money experts do that, and meantime there is plenty of money in this country to carry on with and make industry hum. So let us carry on.

* * *

The argument is still good that when you swap a dollar with the other fellow each of you has only a dollar—nothing is gained—while if you swap an idea with the other fellow then both of you have gained one idea and have two instead of one.

* * *

When you are considering new machinery—which is a good thing to be doing these days—let the main thought be, not the matter of first cost, but what in the matter of performance it will offer toward helping you to purchase a better product at a lower cost.

SCHOOL BUILDINGS.

The signs of the times point toward an unusual volume of school and educational buildings during the year. The agitation for better schools and more school room is resulting in many plans for new buildings for educational purposes of all kinds from community school houses to university extensions. This is one class of buildings that should be well built, permanently built, and above all, built with safety against fire. In a word it is a class of buildings in which brick and hollow building tile should play an important part. Let us be alive to the situation that the merits of these products may be properly presented to those in charge of school buildings.

KILN QUESTIONS AND ANSWERS.

It is through questions and answers that we develop a lot of the good information of the world and that we keep on learning things. That was the thought in mind when the National Brick Manufacturers' Association was authorized to send out questionnaires on kiln burning for the two-fold purpose of securing information on burning methods and on fuel requirements. The man who neglects or refuses to help any

cause of this kind by giving information of his own experience to the best of his knowledge is standing in the light of his own progress. It is through exchanging information and ideas and comparing notes that we arrive at standards of practices and get business on a firm foundation with the power of knowledge to move forward to bigger and better things. So it pays to answer such questions, not merely because the other fellow wants you to, but because it will help you as well as the other fellow and will help the industry make progress toward better times and bigger business.

U. OF I. CERAMIC COURSE.

The University of Illinois announces a short course in ceramic engineering from January 23 to February 4. For the information of those desiring to attend it is said that rooms and board can be obtained either in Urbana or Champaign and that those coming should apply at once to room 202 Ceramic Engineering Building, for information as to rooms and boarding places. Aside from these short courses the University of Illinois offers a four-year course in Ceramic Engineering and also a four-year course in the science of ceramics and in each case emphasis is placed upon the co-ordination of sound theory with practice.

HOMES LEAD ALL THE REST.

The outstanding feature of the statistics of the construction industries for the year 1921 are found in the fact that home building has led all the rest.

The Chamber of Commerce of the United States made a survey of 44 important cities during the period of January to October and found that 57.9 per cent of the total building for that period was for dwelling houses, as against 36.1 per cent in 1920.

Could there be a more graphic illustration of the progress of home building than to see it increase its ratio to total building during the year from 36 to practically 58 per cent?

The home building feature is pretty much the same with all the building statistics compiled and this is only half the story. The indications are that the year 1922 will be an even bigger year in home building. Isn't there plenty of good argument in this to center the attention of the clayworking industry on the matter of promoting a wider use of brick and hollow tile in home building?

BRICK AND LUMBER.

The lumber industry has through its official organizations and publications been giving some attention lately to resolutions of brick trade which recommended forest conservation by using brick for walls instead of lumber. The plain intimation among the lumber people in this official discussion is that the clayworkers are more concerned with pushing the brick business than they are with forest conservation. It is unfortunate that the attitude of the brick industry should be misunderstood or that a resolution should be so worded as to back-fire in this manner. As a matter of fact, while friendly rivalry between brick and lumber is stimulating there should not be enmity or ill feeling because both are essential products in building operations and both should make progress purely on their merits.

Building in this country is in process of evolution and there will gradually and steadily be a more extensive use of brick and hollow tile and concrete for building purposes and a diminishing use of lumber for general structural purposes. This is not only what will be but it is as it should be. Meantime, we could not very well get along without

either lumber or brick. It is seldom that a frame home is built but what it requires some brick work, and in home building there are but few structures, if any, which do not require wood work in some form or other. So why should we have antagonism?

The brick trade may frankly admit that it has a selfish purpose in making a plea for forest conservation through using brick and hollow tile for building purposes. And, then, let the plea stand on its merits on the ground that such a move is good for the builder and beneficial for the country as a whole as well as for the clayworking industry.

A "CLOSED SHOP" OBJECT LESSON.

Streator, Ill., started the new year off right with a big advertisement sign by a number of its manufacturing industries declaring for the open shop. The record as shown in this advertisement is an impressive lesson in the penalties which a closed shop brings. Streator has been a closed shop town in the main and as a result it has lost factories and industries and has such an unfavorable reputation as to labor conditions that it has not been able to induce the coming of new industries. That is given as the reason why employers of Streator have announced in the local papers for the open shop policy and have pledged themselves to observe it. It is refreshing to see included in this good work the names of the clayworkers there which make up an important industrial element of Streator.

WAGE COMPARISONS.

It is said that comparisons are odious and it is certain that any effort at making comparison of wages in this country with those of other countries at the present time is confusing. Also it is rather futile in that admittedly conditions in other countries and the situation as to exchange rates and the interpretations of other money units into dollar units will have to change. It may be interesting to figure out and illustrate by comparisons what these mean at the present time, but it is really not a matter of much material importance. Wages and methods in this country are in the main founded on a different basis than in other countries so that really intelligent comparison is difficult. The main problem we should concern ourselves with in the matter of comparing wages is a study of the comparative wage levels in coal mining, railroading and some of the metal industries with those of agriculture and industry generally. There may well be included in this, too, a study of wages in the building trades as compared to those in other callings requiring a like skill and application. In short, if we are to have wage comparisons and study let us center our main thoughts here on efforts at a better understanding of comparative wage conditions in our own country.

THE ANSWER TO COLLECTIVE BARGAINING.

Russia has furnished a dramatic answer to many questions in socialism and idealism that we have nursed for some time and now it is furnishing a good practical answer to the argument for collective bargaining, and the answer is against it, as it is also against the theory of short hours.

In our official commerce reports on the new economic policy of Russia we are told that overtime is not only to be permitted but it is to be encouraged, and that enterprises operated by the state will abandon uniform wages and substitute compensation according to the service rendered. In most cases it is said this will take the form of piece or task payment which is exactly the opposite from the trend involved in collective bargaining. It is also a tragic reminder

that it is impossible to rate all people evenly in a given work. That wages must be paid to individuals according to the service rendered. It is also a reminder to industry that notwithstanding the many arguments and objections advanced against it the piece work system is the most rational basis on which to establish wage rates.

GATES GETS A LOVING CUP.

The worthy president of the American Terra Cotta and Ceramic Company, our own "button-hole" W. D. Gates, was the recipient of a beautiful silver loving cup recently presented to him by the employes of the company. It was a surprise party and when the presentation was made, "W. D." was for once in his life time at a loss what to say. His discomforture was enjoyed immensely by his associates who, strange to say, are very fond of their boss.

THE OHIO DRAIN TILE MANUFACTURERS.

Annual Meeting at Columbus, Ohio, January 18 and 19.

A HAPPY COMBINATION, business and fun, is planned by the program committee of the Ohio Drain Tile Manufacturers' Association for their annual convention which will be held in the Chittenden Hotel, January 18 and 19. Secretary J. C. Poling of Ada, Ohio, writes a good attendance is anticipated. A complimentary banquet will be given to all visitors Wednesday evening, at which the Rev. E. Stacey Matheny, the preacher architect, will speak on "Personalities Met During the War." An interesting program of business talks interspersed with music will make the occasion a happy one. Every Ohio tile manufacturer is expected to answer "present" when the roll is called.

A BIG ORDER FOR COLOR.



The above is a cut of the new \$1,500,000 building of Montgomery Ward & Co. in Portland, Oregon. This handsome nine-story structure is constructed of reinforced concrete and faced with Red Brick furnished by the Shope Brick Company of that city. Two hundred and fifty thousand pounds of Ricketson red mortar color, or twenty-five tons were used in the coloring of these brick.

The firm of Montgomery Ward & Co. of Chicago is the pioneer mail order house of America. Extensive buyers of all sorts of materials in the world's markets, alive to quality and values, it speaks words of boundless confidence and praise, that for their big new building on the Pacific coast, they should, after most severe tests, have chosen a brick colored by the well-known Ricketson Red, which is known throughout the building world for its non-fading qualities.

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THE CANADIAN CONVENTION

The Twentieth Annual Convention of the Canadian National Clay Products Association will be held at the Carle-Rite Hotel, Toronto, Ontario, February 7th, 8th and 9th, 1922. The Association is prospering. Its membership is the largest in its history and it is constantly predicted that the coming convention will be in every way successful. For program and further particulars address G. C. Keith, Secretary, 51 Wellington street, West Toronto, Ontario.

DRYER CARS.

Frank H. Robinson, Pittsburgh, Pa., has issued a supplement to his catalog, "Bulletin No. 1," which tells of the dryer cars and other clay equipment which he offers to the trade. Many years of experience in the manufacture and sale of this line of brick and tile yard supplies, enables Mr. Robinson to meet every requirement. Bulletin No. 1 illustrates the Robinson line of dryer cars, also dryer car lubricant, Lakewood Flexible Bearings, etc. They also offer a line of kiln bands for round down draft kilns which together with their steel rails, portable track and other equipment can be shipped from stock. For quotations or other desired information, address Frank H. Robinson, 918 Behan street, N. S., Pittsburgh, Pa. See ad. on back cover page of this issue.

The man who thinks that all the progress coming to the clayworking industry has come in the past, has another think coming, for progress is one of the things that stays with us, and right now it is threatening to speed up a bit.

Will Take His Smile With Him to the Convention.

Dear Friend Randall:

Glad to have your letter. Of course I am going to the National Convention, and will bring my customary smile with me notwithstanding the fact that the season just closed has been the poorest year I have had in the fifty years I have been in the brick business. Fortunately, however, I find in making out my balance sheet that I have a little net gain, so I will not have to pawn my watch or my overcoat to have enough money to come to the convention. I am feeling fine and counting on seeing you and other good friends convention week.

Yours very truly,
Quincy, Ill. JOHN T. HUMMERT.

Tile Manufacturers Give Up Plant to Take Up Farming.

Editor The Clay-Worker:

On January 3rd the ownership of the Haviland (Ohio) Clay Works passed from C. M. and C. E. Mumma to James Godshalk of Three Rivers, Mich., and the latter gentleman has moved to Haviland to take immediate charge of the plant which turns out drain tile and building tile. The "Mumma Brothers," as we were generally known in drain tile circles of Ohio, were formerly located at McGill, Ohio, but six years ago purchased the Haviland Clay Works, which they have operated with much success. We are moving to an 800 acre agricultural and stock farm in St. Joseph County, Mich., and we bespeak for Mr. Godshalk the same courtesies both in a business and social way which we enjoyed. We look forward with pleasure to our new work but we will miss our many good friends in Ohio.

C. M. MUMMA.

Clearing the Decks for a Real Vacation Trip.

Dear Randall:

I have been on the jump all the year. Have burned twenty-one kilns and will burn another this week. We are still making, but I do want to get through both making and burning before we start for the convention at Indianapolis, and we are now planning to leave here Saturday, January 21. Want to stop long enough to get the machinery and equipment put in good shape for next season; had to shut down a day recently while we made repairs to our steam shovel. Want to leave everything in good shape, for we will go from Indianapolis to Chicago where we will join some friends and make the trip with them to California.

Yours truly,

JOTHAM POST,

East Williston, L. I.

New Zealand Firm Wants Information in Regard to American Machinery.

Editor The Clay-Worker:

I am enclosing with this money order for The Clay-Worker and Lovejoy's book on "Burning Clay Wares." Mr. Greville Montgomery of the British Clay-Worker tells me you can give me information I want. I would like to get in touch with firms supplying equipment for the manufacture of insulators and also fire brick and like products. I am after all the information I can get relative to the manufacture of insulators and first-class fire brick.

Yours faithfully,
New Zealand.

C. GREENWELL,
Huntly Brick & Fire Clay Co.

Classified Advertisements—Continued.

POTTERS PUG MILLS FOR SALE.

Two American Clay Machine Company's make, No. 3-2, in good working condition. For further information address

THE BUCKEYE CLAY POT. CO.,
Box 36, Station G,
113 dm Toledo, Ohio.

FOR SALE.

One hundred twenty-nine acres fine mineral lands. First class shale, flint, fire clay; two veins snow white clay; three veins good coal, good timber;. Near railroads. Inquire,

NELA MILNER STEAN,
111 East Front St.,
11 cm Dover, Ohio.

WELL DRILL FOR SALE.

One new (never used) No. 25 New Armstrong blast hole drill, without power, but adapted to either motor, kerosene or gasoline engine drive. Address,

SILICON PRODUCTS CO.,
Rm. 18 Ridgway National Bank Bldg.
93 cm Ridgway, Pa.

BRICK PLANT FOR SALE.

The plant comprises Mechanical and Dryer and other Equipment to produce 25,000 to 30,000 Wire Cut Rug Face Brick per day, two Round Downdraft Kilns, 40 acres of land, 20 acres of which contains very large quantity of clay suitable to produce bricks ranging in color from Light Buff to Green (estimated at about 800,000,000 bricks). There is also on property a Brick Cottage and a Brick Veneered House.

Located alongside Grand Trunk Railway at Rymal, Ontario, between four and five miles of Hamilton, a rapidly growing City of 115,000 population in the midst of a large and prosperous dairy and fruit farming district, which would furnish a fine home market for Tile as well as Brick.

For further particulars and inspection apply to,

J. J. CONWAY, Authorized Trustee,
Merchants Bank Building,
11 dm Hamilton, Ontario.

FOR SALE.

One Type 1 J. B. Fate-Root-Heath Company, Bensing automatic cutter, No. 2228, cuts column of clay 4½ inches high, 9½ inches wide into brick 2½ inches thick, with friction driving attachment to run from auger, with many extra parts. This cutter has been run three months. Was purchased new in 1920.

Also one Type 2 J. B. Fate-Root-Heath Company Bensing automatic cutter, No. 2241, to cut 9 inches high, 13½ inches wide and 4 7/16 inches thick, with friction driving attachment to run from auger, with many extra parts, including full set of extra platens to cut paving block size. This is a tile cutter to cut 5 x 8 x 12, 4 x 8 x 12 or 8 x 8 x 16 tile. It is brand new, never has been set up.

For prices on either of these cutters, address,

THE ALLIANCE BRICK CO.,
13 d Alliance, Ohio.

FOR SALE

IOWA BRICK & TILE PLANT.

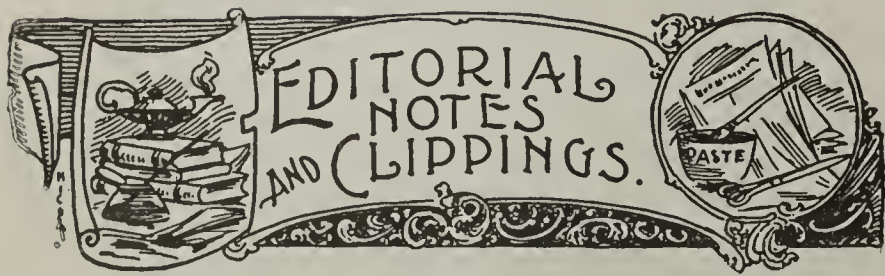
Built but five years ago and practically new. Wish to dispose of same complete. Electrically equipped, six 30-foot down-draft, steel shelled kilns, and all machinery and buildings in first-class shape. A money maker for someone who knows the game. For full particulars address,

THE DALLAS COUNTY CLAY, CO.,
12 cm Woodward, Iowa.

FOR SALE

Modern soft mud brick plant, located in the City of Ithaca, N. Y., with 30,000 capacity Wellington dryer, and all in operating condition. Other business takes all our time.

STEADMAN & ROBINSON,
11 d 230 Cypress St., Brookline, Mass.



The Panhandle Brick & Tile Company of Amarillo, Texas, is the name of a new concern which has just started the manufacture of brick. The plant has a capacity of 100,000 brick per day. A. S. Stinnett is president of the company.

The Muskogee Vitrified Brick Company of Muskogee, Okla., has announced its intention to rebuild that portion of its plant recently destroyed by fire. The loss to the company was estimated at approximately \$50,000, including equipment.

After being out for three months, the employes of the Hocking Valley Fire Clay Company, Nelsonville, Ohio, returned to work the middle of December, accepting the company's terms. The company announces plenty of work for the rest of the winter.

The New Castle (Pa.) Mining and Clay Products Company has been awarded the contract for the 600,000 bricks to be used in the construction of the new Toledo, Ohio, high school building, and will start the manufacture of them at once. The plant employs 50 men.

The Albion Shale Brick Works, Albion, Ill., which has been employing a small force of men getting the plant in shape for active operations, started with a full force of employes the first of the year, and state the prospects are good for a steady run right through the year.

The work of rebuilding Plant No. 2 of the National Fireproofing Company at East Palestine, Ohio, is progressing very satisfactorily under the management of A. R. Trace who has charge of the construction work and will be in charge of the manufacturing end of the plant when it starts operations about May 1. The plant which will manufacture hollow building tile will be operated entirely by electricity.

The brick plant of E. E. Fleurie, New Cumberland, Pa., was badly damaged by fire, December 23rd. The flames were discovered in the engine room and spread until the machinery and equipment was almost completely ruined and a large warehouse destroyed. The loss is estimated at \$35,000. Repairs were started at once, as the company is now behind on orders.

Robinson Clay Products Company, Akron, Ohio, reports semi officially, that shipments during the past year were 2,000 cars greater than during 1920. This marks the highest point for several years. Most of the shipments were from large completed inventory on hand, when the year opened. Operations are comparatively large at the present time for stock for the spring trade.

Work has been started on the new plant of the American Bisque Company at Williamstown, Ohio, which will increase the output of that going concern seven times its present capacity. The company, of which A. W. Ridge is manager, manufactures bulb pots and other novelties, and its business has increased to such an extent in the two years it has been in operation that the new plant became necessary in order to meet the increased demand.

The Dailey Clay Products Company's plant at Warrenton, Ore., started operations the last week in December. Charles Beede, secretary of the company, is very optimistic as to the success of the plant. The first product turned out will be yellow mixing bowls, and a Portland concern has contracted to take the entire January production, about 6,000 dozen. The

product, when the company is well under way, will include mixing bowls, teapots, cuspidors, jardinières, jugs, etc.

Mr. James B. Oberly, of the Oberly Brick Company, is quite seriously ill at his home in Wilmington, Delaware, of Bright's disease. He has been confined to his bed for seven months.

The Finzer Bros. Clay Company, Sugar Creek, O., manufacturers of back-up blocks, building blocks, silo blocks, and tile drain, has entered the building brick game, having recently secured an order for 100 carload of brick to be delivered to Cincinnati, O.

The Colonial Brick Company of Winchester, Va., has been organized and a plant is now in process of construction. Both hand-made and machine-made brick will be made. It is the intention of the company to manufacture a special brick which will be a reproduction of the brick used in the building at Mount Vernon.

The Schuylkill Pressed Brick Company at Schuylkill, Pa., is making a number of improvements in its plant, and when completed the plant will be operated by electricity instead of steam. They will start with the machinery which brings the shale to the plant. The company has recently installed a Brown pyrometer which will result in improved burning methods.

Goodrich & Sons of Wheatland, Wyo., are planning on opening a brickyard at Yoder, the present terminus of the branch road of the Union Pacific, in the spring, and will furnish brick for a large number of permanent buildings in that town. The elder Goodrich is a pioneer in the manufacture of brick, in the Wheatland colony, and his brick were used in many of the large buildings of that city.

The Standard Brick & Tile Company, of Portland, Ore., had a most successful year in 1921, and starts the new year with bright prospects. They are planning a number of improvements to the plant so they will be ready to take care of their trade in the best manner possible. A. H. Wethy, Jr., is president and manager, Charles E. Jensen, plant superintendent and Otis J. Fitch, sales manager. The plant operates the year through.

The Northwestern Terra Cotta Company of Chicago, has received from E. Elford, general contractor, the contract for the terra cotta on the additions to Brown Hall and the Physics Building at Ohio State University, Columbus, Ohio. This same brand of material was used on both the original buildings. Because of the crowded condition of the engineering and physics departments, work will be pushed on the two buildings, ground having been broken on the latter.

The Auburn Shale Brick Company of Auburn and Gettysburg, Pa., was awarded a verdict for damages of \$1,350 against the coal firm of Steffey and Findlay, Hagerstown, by a jury in the Circuit Court of Hagerstown, recently. The suit was for failure of the Hagerstown company to keep a contract made with the Auburn Company in 1916. The contract stipulated that the Hagerstown Company was to supply the brick company with two cars of coal a week. It was charged that the Hagerstown company failed to do this and as a result the plaintiff was forced to suspend operations for a time thus losing considerable money.

The plant of the Shale Hill Brick & Tile Company, of Chillicothe, Mo., is one of the clayworking concerns of that state which run steadily all through the past year. J. A. Dailey, formerly of Terre Haute, Ind., is manager of the plant which has been enlarged to a fourteen kiln plant. They are now turning out about six carloads of hollow building tile per day, most of which are being stored for shipment in the early spring.

The Connecticut Roofing Tile Company has been incorporated at Wilmington, Dela., with \$200,000 capital stock.

Adam J. Walz will build a brickmaking plant at Fort Mason, Fla. Mr. Walz is a former resident of Granite City, Illinois.

H. T. Morris and A. A. Broerman, of Escondido, Calif., will build a brick plant at that place, where they have a large deposit of exceptionally fine clay.

The Central Tile Co., of Terre Haute, Ind., manufacturers of floor and wall tiles, report very busy and successful business in 1921. W. S. Duenweg, manager of the concern, says prospects indicate a still better season the coming year.

The Sacramento Brick Company, Sacramento, Cal., is planning for the installation of new machinery to develop an annual capacity of about 30,000,000 brick. Equipment will also be installed for the manufacture of roofing tile. H. H. Bartells is general manager.

J. E. Gallagher, of Apollo, Pa., has purchased the brick-making plant of John H. Walters at Johnstown, Pa. Plans are under way to clean up the grounds and repair the kilns preparatory to putting the plant in operation. It is also rumored that the plant will be considerably increased in size. There are three acres of ground with the plant and the outlook is good for this enterprise being the scene of much activity during the present year.

Following the general trend of things, the Richards Brick Company of Edwardsville, Ill., has announced a reduction of \$3.00 per thousand in the price of brick. The move is made with the hope of stimulating building in that section. The employes of the company accepted a slight reduction in the spring as their share toward building resumption and the

company announces this reduction will be taken from the profits of the company.

The Sulphur Springs (Tex.) Fire Brick Company, will build an additional plant at Marshall, Tex.

The Wilson-Beaver Coal Company, of East Palestine, Ohio, has plans under way to erect a modern brickmaking plant.

The Crodius Steam Pressed Brick Company, of Pontiac, Mich., has plans under way for the erection of a new factory. C. J. Crawford is president.

The Sterling Brick Company, Detroit, Mich., has been incorporated with \$25,000 capital stock. The office of the company is located at 5201 Twelfth Street.

The Fraser Brick Company, Dallas, Texas, has purchased the plant of the Seguin (Tex.) Vitrified Face Brick Company. The purchase price is given as \$75,000.

The plant of the Rex Shale Brick Company, Rapid City, S. Dak., suffered a \$3,500 fire loss the latter part of December, partly covered by insurance. Repairs will be made at once, and new machinery will be installed.

The Coral Ridge Clay Products Co., Louisville, Ky., one of the largest clayworking firms in Kentucky, of which genial J. T. Howington is general manager, reports satisfaction with their 1921 business. One of the largest contracts booked by Mr. Howington last year was the hollow tile for the new Federal Hospital at Dawson Springs, Ky.

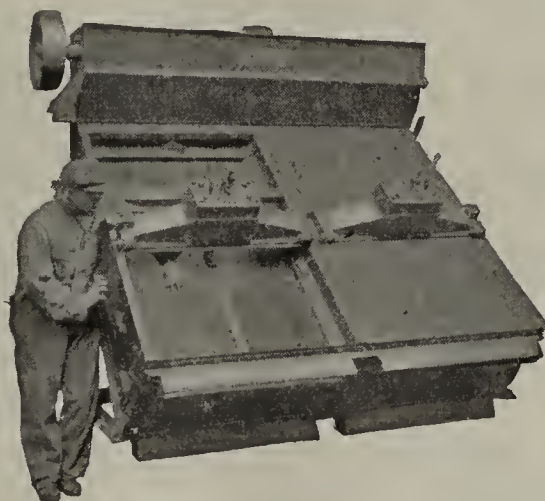
W. G. Buckles, formerly of Coffeerville, Kansas, is at the head of a company which is being organized at Boulder, Colo., for the manufacture of vitrified paving brick first, and after that is well under way, face brick will be made also. Mr. Buckles is a brick manufacturer of many years' experience which speaks well for the success of the plant from the start.

More HUM-MERS sold in Nov. and Dec. than any previous two months!

ARE you among the alert, progressive business men who have taken advantage of the lull in business to prepare for increased activity—for greater profits?

In your own industry, forward looking companies are going over their plant equipment now; they are making repairs and improvements; discarding antiquated machinery; installing modern, more efficient and economical devices.

More HUM-MER *Electric* Screens were sold during



Hum-mer *Electric* Screen
Screens any material from 2" dia. to 200 mesh
Catalogue 42-W Sent Upon Request

November and December than any previous two months. These companies are preparing to get the cream of the business; they are increasing profits by reducing costs; they are improving the quality of their product.

Are you preparing to get and hold your share of profitable business?

Act now! Let us show you the advantages in increased tonnage, better separation and lower upkeep cost of HUM-MER *Electric* Screens.

THE W. S. TYLER COMPANY, Cleveland, Ohio
Manufacturers of Woven Wire Screens and Screening Equipment

CERAMIC ENGINEER MAKES CHANGE.

Forest K. Pence, for a number of years head of the ceramic department of the American Encaustic Tiling Co., Zanesville, Ohio, has resigned to take charge of the research department of Knowles, Taylor & Knowles Company, well known pottery manufacturers. Mr. Pence is president of the American Ceramic Society, and ranks among the best authorities on ceramics in the country.

NEW ORLEANS BRICK MAN ANNOUNCES PRICE REDUCTION.

A reduction of \$2.50 a thousand in the price of building brick in the New Orleans market was announced by Fred Salmen of the Salmen Brick and Lumber Company of that city as a New Year's gift to the builders of that section. "We are simply doing our bit to bring about a return to normal prices and to help along the building program for 1922," said Mr. Salmen. This reduction makes a price of \$12.50 per thousand for common brick delivered in the business district of New Orleans. This is just half the ruling price in January, 1921. If other brick manufacturers throughout the country will do their bit in a similar way, the long anticipated building boom may materialize in a short time.

NEW YORK BRICK MEN HAVE GOOD YEAR.

W. K. Hammond, New York City, prominent Hudson River brick manufacturer and ex-president of the N. B. M. A., says that all the brickmakers in that section except three or four, who are drying artificially, are through for this season. The latter are able to continue work all through the season. While the artificial drying equipment is a success, yet it calls for

such a large investment many of the older brickmakers are loath to install it in their plants. The operators of these plants are enabled to produce brick all through the winter. The total output of brick this year, Mr. Hammond says, is 40 per cent greater than last year, but there is less stock on hand than last year. A good many have been disposing of their stock in anticipation of labor troubles after the first of the year. North River red brick is now sold at from \$14 to \$14.50 per thousand in barges at the foot of W. 52nd st., Manhattan, and towing charges must be added for delivery to Brooklyn. Last year these same brick sold at \$18.

ARKANSAS BRICK COMPANY PROSPERING.

The Fort Smith (Ark.) Brick Company had a most successful and busy year in 1921. This company was formerly the Burke Brick Company which it succeeded in 1917. The present officers are: H. C. McKinney, President, El Dorado, Arkansas; M. W. Hardy, vice-president, Little Rock; C. T. Mansfield, vice-president, Warren; Edgar M. Rowe, secretary-treasurer, Little Rock; Victor Anderson, manager, and Ernest Penninger, sales-manager. The plant is located southeast of Fort Smith and manufactures building brick and face brick. It has a capacity of one and one-half million bricks per day, employs seventy-five people and the products are sold in six states—Missouri, Oklahoma, Arkansas, Tennessee, Louisiana and Texas. Offices are maintained in Little Rock, Memphis, New Orleans and Fort Smith, and the company has representatives in Shreveport, Dallas, Fort Worth, Houston, San Antonio, Oklahoma City, Tulsa, Springfield, Missouri. The Fort Smith Brick Company has gained an enviable reputation throughout the Southwest. The high quality of its products has attracted the attention of contractors, architects and big construction companies operating through that section.

UNLOAD COAL FOR 3 CENTS PER TON



That is what we guarantee for the Columbus
Elevating and Conveying Equipment.

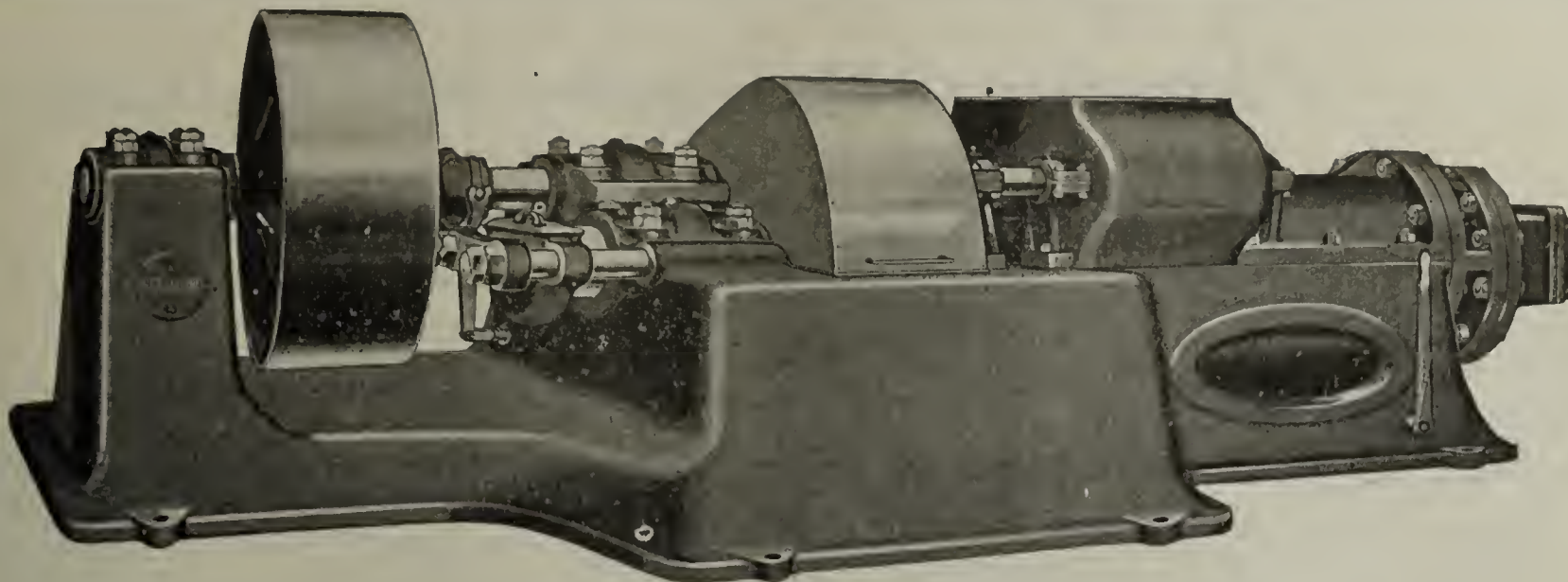
Steel and Malleable Buckets furnished in all
sizes and shapes.

Chains, Sprockets, etc.

Let us quote you on your requirements.



The Columbus Conveyor Co., Columbus, O.



Type 445—25M to 40M Brick per day
 Type 435—40M to 75M Brick per day
 Type 425—75M Brick per day Upward
 Or the Equivalent in Hollow-ware.

**THREE MACHINES OF ADVANCED DESIGN
 TWO MAIN CASTINGS, SHAFTS AND GEARS**



Type G

**Dryer Cars
 and
 Industrial Cars
 of all types**

**A Complete Line of.
 Machinery and Equipment
 for the Clay Plant.**

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

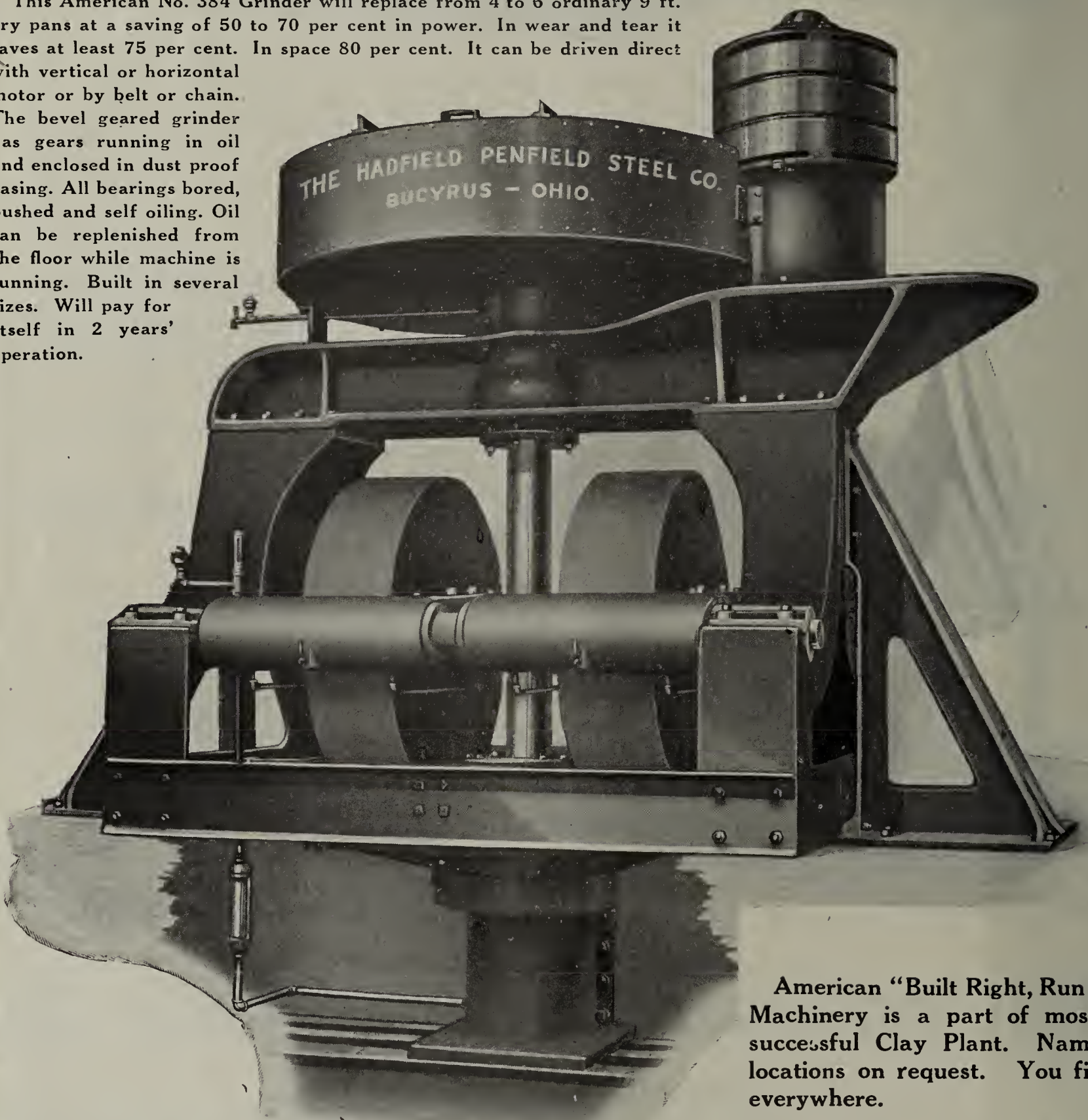
Pittsburgh, Pa.

American Machinery Reduce Cost of Some Bradford Success Features

Here are some of the important Units which have made the Bradford Brick & Tile Co. plant at Bradford, Pa., a success. What they have done for Bradford they will do for you. Particulars on any of these machines on request They will help reduce the cost of building and increase your profits.

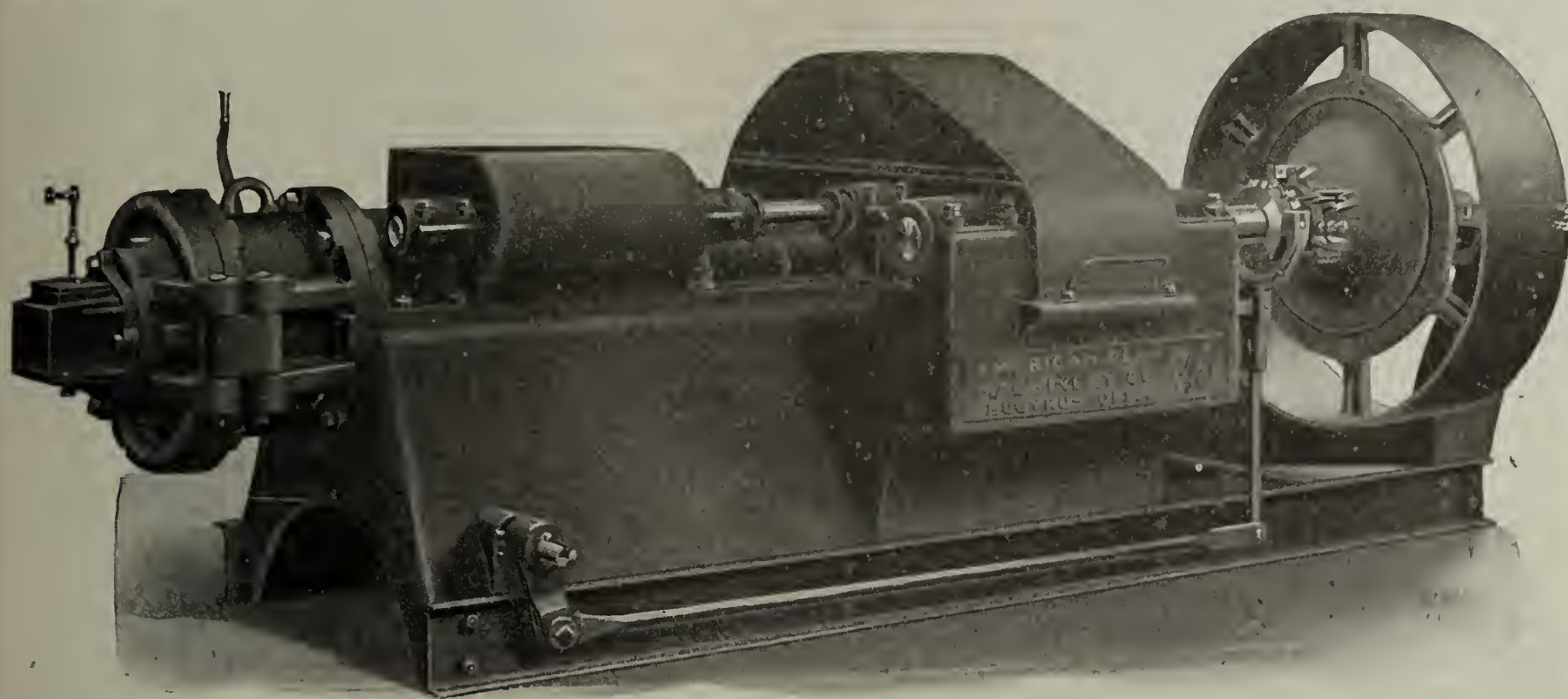
No. 384 AMERICAN GRINDER

This American No. 384 Grinder will replace from 4 to 6 ordinary 9 ft. dry pans at a saving of 50 to 70 per cent in power. In wear and tear it saves at least 75 per cent. In space 80 per cent. It can be driven direct with vertical or horizontal motor or by belt or chain. The bevel geared grinder has gears running in oil and enclosed in dust proof casing. All bearings bored, bushed and self oiling. Oil can be replenished from the floor while machine is running. Built in several sizes. Will pay for itself in 2 years' operation.



American "Built Right, Run Right" Machinery is a part of most every successful Clay Plant. Names and locations on request. You find 'em everywhere.

Bradford Brick & Tile Co., Bradford, Pa.



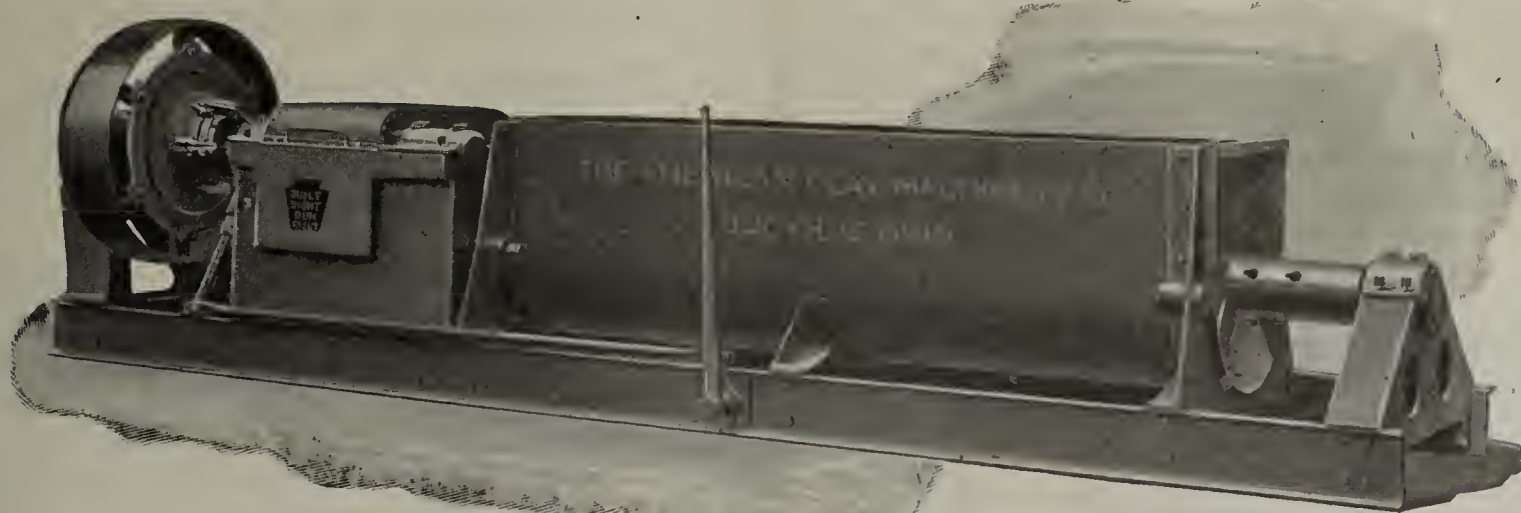
AMERICAN No. 290 AUGER MACHINE

The American No. 290 Auger Machine has set the pace in Clay Working Machinery. There are some imitations but no equals. Efficient in operation. Durable in construction. Upkeep cost very low. Production very high. Built in several sizes.

AMERICAN No. 302 PUG MILL

A modern designed and modern built machine. Economical in power. Low upkeep, efficient. Thorough and fast in preparation of clay for the Auger machine. Can refer to numerous users.

THE HADFIELD-PENFIELD STEEL COMPANY, BUCYRUS, O.



American No. 302 Pug Mill

Written for The Clay-Worker.

SEEN IN NEW JERSEY.



THE NEW YEAR brings more promise for a steadily growing market for brick and manufacturers anticipate a "boomer" for 1922. It is becoming an established fact that brick is one of the commodities which has not as yet reached bottom, in this State, and the general opinion is growing firmer, and prospects are not for lower prices in the near future, especially in face brick. The only chance of such a change is by increased production, which can not come without increased demand. Factors agree that a big year is before them and are bending all efforts toward securing options on brick needed, especially that for early spring work.

The building year 1921 went out in victory, beating all records in New Jersey. Building materials during the year dropped 25 to 30 per cent, and the significance of the 1921 totals becomes still greater, as at the prices of a year ago the same volume of business would have been at least seven millions more. Building operations increased during the year more than 25 per cent. While the year started off with little big work, the release of plans for school work through the eastern section of the state brought up the total. The totals for December were four times as great as for the corresponding month of 1920.

Shipments have been about 25 per cent greater than those of 1920, and even at the time so many yards in this state close down, they are delivering 25 per cent more brick than during the same period of 1921. Yards around Hackensack are not producing much now, though the Gardner plant is in operation at the present time. The Kingsland wire cut factory is working to capacity and making shipments via motor truck into the nearby cities such as Newark, Patterson, Passaic and smaller places.

Shipment of common brick from the Hudson River towns in and near Haverstraw have not been hampered as yet, via the waterways, due to the mild season and open river. All companies are pushing water shipments on common brick and prices remain at the \$18.00 level delivery to practically all points in the eastern part of New Jersey. Shipments are made by rail and options have been taken on large lots in amounts up to \$1,500,000. A number of factories are in prospect and architects report plenty of new business on the table.

Housing is one of the important items for 1922. One large investor is building a block of houses in Montclair, of brick, that average \$20,000 each. One house will be built of Bloomsburg reds, another Kittanning buffs, one of the May's Landing mixed reds. Those of gray, brown and light reds are also placed to good advantage.

The demand for brick houses in this locality is rapidly increasing and different colors and grades of face brick are making their appearance.

N. H. Sloan, Patterson brick broker and extensive handler of face brick, has secured a number of new accounts and reports a good year for 1921, but anticipates an even better one for 1922 in large work, though a number of small projects are also in view.

A ten-story structure will be erected in the spring for a large store and office building to cost approximately \$250,000. An equally large theater is under discussion in Patterson, another in Passaic, and banks, municipal buildings, schools and factories in the suburban towns of both cities.

Newark brokers report inquiries active and big business in prospect for 1922. A. S. Reid Company is receiving inquiries at the present time for face brick for school work in Newark,

Summit and Springfield and a preference is being shown for grays of all descriptions.

The Jersey City brokers are receiving orders for future delivery. Otto Witpenn, who controls the Kittanning brick factory, has received a number of good orders during the past month and believes that the year before us will be even better than 1921. He says there is a big building boom due for New Jersey and the metropolitan district and that face brick will be used in greater quantities, as there are many public buildings and theaters under discussion, construction of which is contemplated for the spring.

Prices on common brick throughout the state are quoted at \$14.50 to \$16.00 from the yard, or at the dock in some instances, depending upon the grade. Face brick have a wide range with the first grades priced at \$55.00 delivered at the job, and as low as \$35.00 for others. Demand at the moment is most active for grays and reds, the latter with a tendency for the dark shades. Rough surface is preferred.

South Jersey brick plants report even more activity than is noted in northern plants. Terra cotta firms claim that inquiries are being received each day and request for shipments on entire fronts for a number of the new bank buildings to be erected in all parts of the state. The Raritan section is delivering by waterway and Perth Amboy by rail, more than any other. A soft mud brick is in demand here.

Trenton yards report a good volume of business, but a tendency for lower prices is featured, because some yards are slashing prices for some unknown reason. Rumors are afloat of a red face brick for \$32.00, though this is not the general price.

BURTON.

There is no such thing as standing still and holding our own. We must either keep pushing forward or we will slip back.

17,000 Appraisals

(250 of Clay Working Plants)

during the past quarter century, qualify us to render you an unexcelled service in the valuation of your property for Insurance, purchase, sale, financial, accounting or Federal Tax purposes.

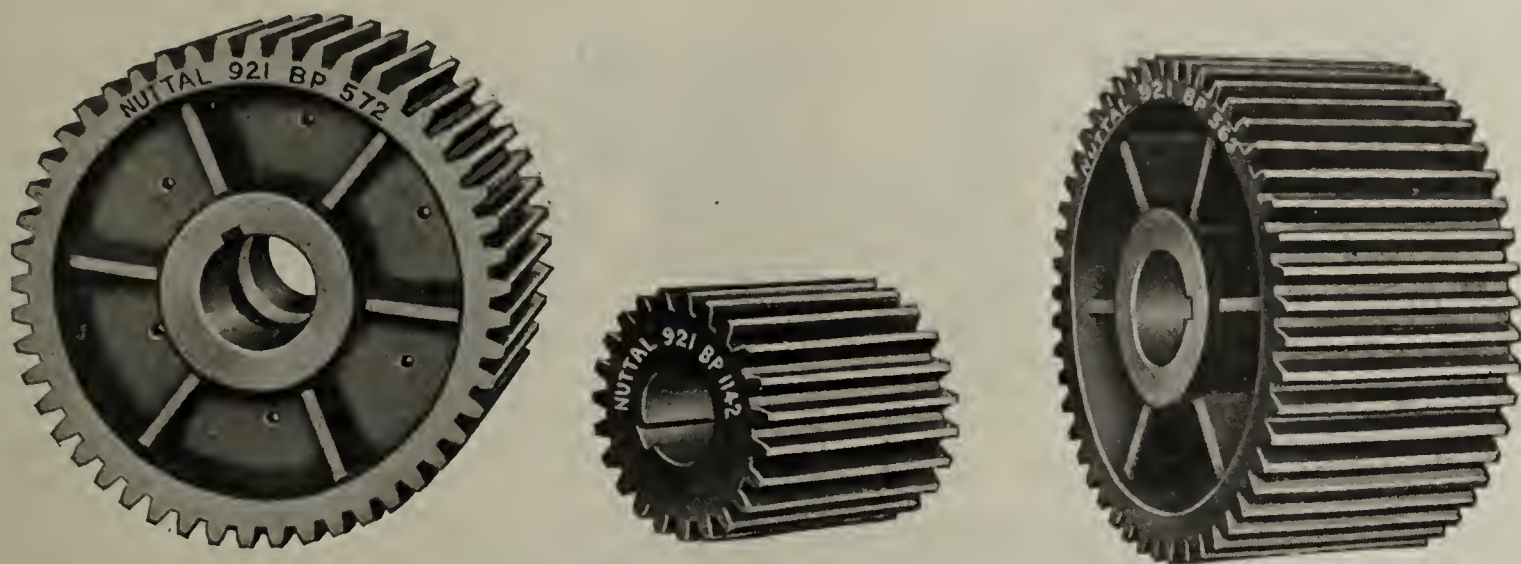
The American Appraisal Company

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We Particularly Solicit Your Investigation of the BP Gear

**The Western Brick Co.,
Danville, Illinois**

Have just recently removed from service a BP Pinion, actual working days 348, where untreated averaged but 47.

Efficiency for BP-750 per cent.

Our guarantee is 400 per cent.

The advantage of Higher Efficiency and longer life of Nuttall BP Cut Tooth Gears is so pronounced over the old Cast Tooth Gears (so generally used in clay working machinery) that we invite your particular investigation of

A Gear That Will Save Real Money.

BP Gears have that tough, hard surface—a requisite of proper wearing quality—and it grades off uniformly to the **tough** center, giving abundant strength to withstand the severe shocks and jolts of Clay Working Machinery.

BP Gears are guaranteed to give four times the life of untreated gears in identical service.

For reliability, long life, and smooth operation specify Nuttall BP Cut Tooth Gears.

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NOTES ON THE MANUFACTURE OF EARTHENWARE

By
Ernest Albert Sandeman.

A Practical Treatise Giving Detailed Particulars Regarding Materials, Preparation and Manufacture.

PRICE \$3.00.

T. A. Randall & Co., Inc., Indianapolis, Ind.

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher, Indianapolis, Ind.

To the User of Up-draft Kiln With Furnace Headwall

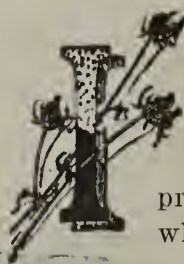
Opportunities of 1922 are knocking at your door. You can now get full instructions from A to Z in the art of burning bricks in the up-draft kiln, with 450 to 600 lbs of good coal. It describes in detail—setting brick, platting, watersmoking, burning, regulating draft, etc. Will also give permit to use my patented method of protecting arches for the year 1922. All for \$15.00 cash with order. If you are pleased with your results you may secure a permanent yard right by paying an additional sum of \$85.00. This system will eliminate all ragged or cracked brick in your arch heads. In addition to producing 99% good red brick in your arches, it will give you better kilns. The cost of equipment is about \$3 per arch. This is the best opportunity of a life time; you can easily save the entire cost and expense before the next payment becomes due.

My folder on Fuel Economy and Burning Brick in the Up-draft Kilns is \$10.00 and will save its price from two to ten-fold every kiln. If this appeals to you then order before you forget.

F. W. GLECKER,
Oak Harbor, Ohio

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.



INVENTORIES and other annual year-end business has been occupying the attention of Wisconsin clay products manufacturers during the early part of January. The year 1921 was in sections of Wisconsin and in some lines of clay products quite satisfactory. The building boom which hit Milwaukee about the middle of the year ran up into a mark exceeding \$25,000,000 by \$222,044 and passing all previous records for this city. In some other cities of the state a large amount of construction was also done, while in others that were hit by the industrial depression the total was only moderate. The demand for clay building products and clay drain products among agriculturists was, on the whole, of small volume owing to the conditions in farming communities brought about by low prices of farm produce and products.

Indications already point to a good record in building operations in Milwaukee for the new year. Already there is over \$6,000,000 in large buildings in view for this year, which is double the amount in large buildings for the entire year of 1921. "Prospects for the coming year are very bright," said Building Inspector W. D. Harper. "We now have in view a number of buildings which will cost several million dollars and which are certain to be started in the early spring. We also feel that now is the time to build, as the prices of building materials will not drop to any extent in the near future, and we must all realize that the price for labor cannot drop to any extent until commodities show the lead."

Progress and problems of the clay brick and tile manufacturers of Wisconsin will be thoroughly discussed at the contemplated annual convention of the Wisconsin Clay Manufacturers' Association. The 1922 convention will probably be held in Milwaukee during the early part of February, according to Oscar Zimbal, Sheboygan, Wis., secretary of the association. At this writing the date for the meeting was still undecided and the program had not been shaped sufficiently for announcement. Last year the convention was omitted. The present officers of the Wisconsin organization are: John Ringle, Wausau, president; Samuel Gunther, Port Washington, vice-president; Mr. Zimbal, secretary, and Erwin Fricke, Manitowoc, treasurer.

The Burnham Bros. Brick Co., Milwaukee, in a case against the city of Milwaukee, attacks the city zoning law as unconstitutional, an invalid delegation of legislative power and as taking property without due process of law. The petition of the brick company asks not only that the city zoning ordinance but the statutes which made it possible, be set aside. Judge Oscar M. Fritz in Circuit court, has issued an order overruling the demurrer of the city attorney, but did not pass on the merits of the case. Under the zoning law the property of the brick company is placed in the residence section. The city will make an immediate appeal to the Wisconsin supreme court from the order of Judge Fritz, to determine the legality of the zoning law.

The Marinette Iron Works, Cook street, Marinette, Wis., has enjoyed a good business on its product known as the Anderson Brick Conveyor, patented by Charles Anderson in May, 1911, and which has been installed in a large number of plants throughout the country, with more than half going to New England brick factories. In Wisconsin installations have been made at Menomonie, Green Bay, LaCrosse and New London. Mr. Anderson has recently returned from the East where he had been for several months installing conveyors. He is now preparing installations in California. Mr. Anderson has associated with him in the business a son, Clarence Anderson.

WHY

DO OPERATORS OF
DRY PANS, WET PANS, CRUSHERS,
SEWER PIPE AND TILE
MACHINERY

PREFER

STEVENSON EQUIPMENT

THERE'S A REASON

A LIST OF NEAREST USERS ON REQUEST
ASK THEM

THE STEVENSON COMPANY

GENERAL OFFICES
AND
WORKS

Wellsville = = Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING

Chicago = = = Illinois

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.

INCORPORATED at \$2,000,000, the Donahey Power and Products Company is building and equipping a plant at New Philadelphia, Ohio, for the manufacture of sewer pipe and all kinds of building materials from the famous Number five fire clay of the Tuscarawas County clay belt. Vic Donahey, former state auditor, is president of the company. It is announced that J. Walter Moore, of Uhrichsville, O., will be plant manager. He has had 30 years' experience in the manufacture of clay products and 20 years of this time was devoted to plant manager of large concerns.

W. E. Knight, of Lorain, O., is secretary and auditor of the company. The selling organization will be under the management of Joseph J. Rowe, of Cleveland, who for years has been connected with one of the largest producers of clay products in the United States.

General offices of the company have been opened in the Hanna Building, Cleveland, O.

C. P. Reddrop, secretary of the Bedford (Ohio) China Company, since that concern was formed, has resigned. His successor has not yet been named. Mr. Reddrop, previous to going with the Bedford company, was sales manager for the Summit China Co., at Akron, O., before that plant was taken over by the Bowman Bros. Company, of Cleveland. He is part owner of the Brown Reddrop Company, a selling organization with offices in Cleveland.

H. E. Henderson, head of the Carrollton Pottery Co., Carrollton, Ohio, is now in Florida, where he will spend the winter with his family as has been his custom for several years. He made the trip south by motor.

The Robinson Clay Products Company, Akron, is expected to operate at a comparatively high rate because stocks are at their lowest point in many years and the inventory will be built up for spring business. The concern besides being a large manufacturer of tile and brick products, is a large producer of yellow ware and stoneware.

Fire of undetermined origin, destroyed the office and other buildings at the State brick plant at Junction City, December 20. The loss was estimated at \$10,000.

The Kelly Island Company is launching an extensive program of expansion, which in the acquisition of the Dolomite Products Company, which has its plant at Maple Grove, near Tiffin and the Lake Erie Sand Co., includes the purchase of one plant in the east, one in Pennsylvania, and one in the west.

When these consolidations are completed, the company, it is understood, will be the largest producer of lime products in the world. Its shipments will reach from the lakes to the gulf, and from ocean to ocean.

Mr. Kling, it is said, intends to devote more time in the future to the Cleveland Builders' Supply and Brick Company, which still remains what he terms "his baby," although it has grown to full size.

More than 30 years ago, Mr. Kling entered the builders' supply business, later incorporating his own company, the Cleveland Builders' Supply Co. That company today is the largest distributor of fire safe material in the country.

Starting with a capital of \$10,000, the company today has assets of \$12,000,000, while the population of the city of Cleveland has grown 50,000 to approximately 1,000,000.

Two years after the consolidation of the Cleveland Builders' Supply Company and the retail department of the Kelly Island Company and on the death of Caleb E. Gowan, Mr. Kling became president and general manager of the Kelley Island Company.

BUCKEYE.

CHAMBER OF COMMERCE OF THE UNITED STATES FORETELLS GREAT ACTIVITY IN BUILDING INDUSTRY.

THE greatest building activity in this country this year will be in the industrial states, according to a forecast of the building outlook made recently by the Committee on Statistics and Standards of the Chamber of Commerce of the United States.

It is pointed out by the Committee that there will be a good many business buildings next year, and a large number of them will be in the shape of alterations and enlargements. On the other hand, it says, it is unfortunate that not a great many farm buildings, such as dwelling houses, barns, cribs and the like, are contemplated.

According to the Committee, California leads the other states with respect to probable construction, while good likelihoods of construction lie in the Central West and in the East.

"There, also, are a great many possibilities for building in the Southern States," it says. "These possibilities are greater than seemed likely under the stringent conditions which prevailed there prior to the rise in the price of cotton.

"The prospects for building in the strictly agricultural states are not so favorable. There are several reasons for this, principally the exceedingly low and unremunerative prices on farm products, which seriously reduce the purchasing power of the farmer. In addition, the banks generally throughout the agricultural sections are fully loaned up, so that the farmer finds it difficult to obtain either ready money or credit. In such circumstances there is not likely to be much building in these states, especially on farms, for the simple reason that the farmer is financially unable to build.

"Three factors enter largely into the problem of building during the coming months: the high price of material, high price of labor and the question of obtaining funds for construction. Prices of material, on the whole, are much the more favorable of the three factors. It is only here and there that there is any apparent difficulty in this respect. The matter of too high priced labor does not stack up so well as that of material, but there is a general belief that not only are matters improving in this direction but when springtime comes, the long period of probable idleness of labor will naturally tend to bring about a much more favorable solution of this problem than is now presented.

"There are the usual scattered exceptions to any general statement. Labor is plentiful in some sections, scarce in others. The matter of obtaining money for construction is the most difficult problem of all. It is not that money seems to be so high in price as that it is hard to get, particularly in the agricultural sections and on the countryside rather than in the large cities.

"Apparently when construction gets well under way, it will comprehend a great many dwelling houses in its purpose and intent; this because of the supreme necessity of more adequate housing almost everywhere.

"There also will be a very large number of educational buildings, such as schools, and additions to colleges and universities. The numerous 'drives' for funds set on foot by all sorts of educational institutions will bear fruit in many new buildings next spring. In particular, the great state universities of the West and the South have more liberal appropriations from their various legislatures for building purposes than for many years. There are likewise a number of public buildings under way.

"Few things tend to hasten the return to better times than the building industry. Things used in the building of dwelling houses call upon virtually all the industries of the country for their products. A general and far-reaching construction program in this country in 1922 is the best possible harbinger of a return to more prosperous conditions."

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

By using this system you can reduce your fuel cost and your labor cost. You can increase the amount of first grade ware. You can raise the selling value of all your ware. It will make more money for you than you have ever made per year before. If you doubt these statements go and see for yourself and be convinced. As a matter of education in burning clay ware visit the following plants:

U. S. Brick Co.	Tell City, Ind.
Huntingburg Pressed Brick Co.	Huntingburg, Ind.
Standard Brick Mfg. Co.	Evansville, Ind.
The Best Brick Co.	Evansville, Ind.
Kalamazoo Clay Co.	Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U.S.A.

BUILDING GOOD WILL INTO BRICK.

(Continued from page 37.)

Association, California Redwood Association, Oak Flooring Manufacturers' Association.

These associations have gone on with various sorts of campaigns and with a varying degree of continuity but, in the main, they have all been carried along and, beyond any doubt, they have built up a vast amount of knowledge and good will for lumber. Here was a case where a number of co-operative campaigns have been behind a broad appeal for lumber as a building material in a general way and for their own particular kind of lumber, in a special way.

Brick Makers May Profit by the Experience of Their Competitions.

The great activity of the lumber people presently stirred the cement manufacturers to undertake a campaign. For a number of years this advertising has gone forward, under an increasing appropriation each year. It has covered the use of cement for all kinds of building purposes—houses, business buildings, factories, roads and bridges—with the result that the market for cement has had an unparalleled expansion. Along collateral building advertising lines have been the campaigns of the Paint Manufacturers' Association, the Metal Lath Manufacturers' Association and the Wall Paper Manufacturers' Association. Upon inquiry, I have learned that the Cement Association includes, as backers of its co-operative campaign, a list of active contributors representing 85 per cent of all the cement manufacturers in the country. The Wall Paper Association includes 90 per cent of the manufacturers and about 75 per cent of the jobbers as supporters of its campaign, while the lumber associations, I am informed, include practically 100 per cent of the manufacturers of their particular branches of the industry. This association, therefore, becomes impressive and powerful because of its representative character. It has a sense of solidarity and of corporate unanimity which combine to make a powerful appeal. When one reads an announcement in which a great number of competitors join in informing the public in regard to the qualities of the product they make, there is a feeling that the appeal represents the combined judgment and authority of an entire industry—and that is precisely what it does represent and that is one of the manifest reasons why co-operative advertising campaigns have had such a far-reaching effect in building up good will.

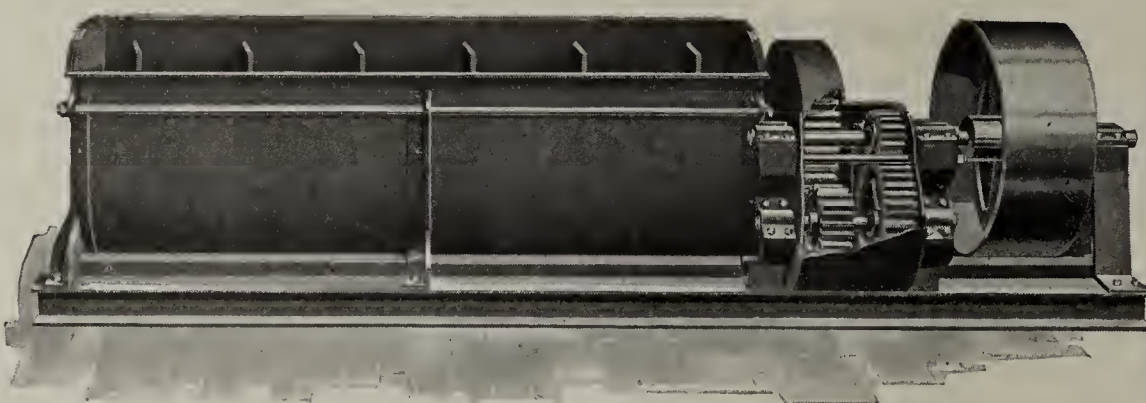
As to the immediate and collateral results from your own campaign, I cannot speak from first-hand knowledge. My friend, Dr. Mars, I am sure has convincing figures and reports and records that establish a complete case on that point. But I do know the effect that your campaign has had on me

reference to which I made in the beginning of this address; I also know of the favorable impression in regard to brick that has spread throughout the country. And I think as one quite detached, I may be in a better position than even you are in, to venture an opinion as to the cumulative value that will come from continuing your campaign. I have just been describing briefly the many co-operative campaigns that are being carried forward by whole industries. In going forward yourselves you have the support of this great body of experience of associations similar to your own. You can thus touch elbows with a large company of alert and successful organizations marching in the same direction. Clearly, so many of them would not be marching in that direction if, to use the vernacular, they had not found "the going good." I presume there would not be a protracted period of mourning among the lumber associations and the cement associations if the brick advertising campaign should cease. But one doesn't have to be a prophet nor the son of a prophet to foresee the time when there would be weeping and gnashing of teeth among the makers of brick. But I am fully conscious of the fact that you are not inclined to add either to the satisfaction of your competitors or to grief for yourselves. And manifestly the way to do that is to go steadily and surely forward.

An Illustrious Example.

Meeting here today in the Virginias, I am reminded of that great Virginian who did so much to build up a good will value for that fair country beyond the Blue Ridge. You will recall how he went out with his transit instrument and chainmen, and spent three strenuous years charting and surveying the holdings of Lord Fairfax that lay to the other side of the Monongahela. That was the real beginning of the West. The trapper, the hunter, the French explorer out of the North, had come and gone and left not so much as the ashes of a campfire. But the young Virginia surveyor read the stars to get the triangulation for his instrument and he laid true the lines of ownership and settlement and civilization; the wilderness surveyed, is a wilderness no longer, for then it lies in the sure reach of man's conquest. Here was the "father of his country," as a youth, making a survey and keeping a complete journal of his observations about streams and forests and soils to bear back to the owners of the territory, Lord Fairfax and his brother, Sir William, a journal that is one of the earliest advertising booklets ever written in America. For that is precisely what it was. And following the information it spread in Virginia, in a limited way, to be sure, there went across the mountains, now and again, a hardy pioneer to begin a new home. Letters found their slow way back to the old homes,

(Continued on page 74.)



TORONTO PUG MILLS

Built in either double or single geared models, any length from 10'0" to 14'0"
Send us your inquires.

Toronto Foundry & Mach. Co.

Toronto, Ohio.



Henry The VIII— Brick Maker of England

Brickmaking was introduced into Britain nearly 2,000 years ago by the Romans, but after their departure the art was lost. Not until the 15th century did bricks come into general use again, and then only for important buildings.

Henry VIII helped to signalize his reign by importing master workmen from Flanders, and under their teaching brickmaking was brought to great perfection. Since the 17th century brick has been used in Britain in practically all building, except in sections where stone is plentiful, and brick clay scarce.

In the United States there is no danger that brickmaking will become a lost art, but it is not as widely used as it should be.

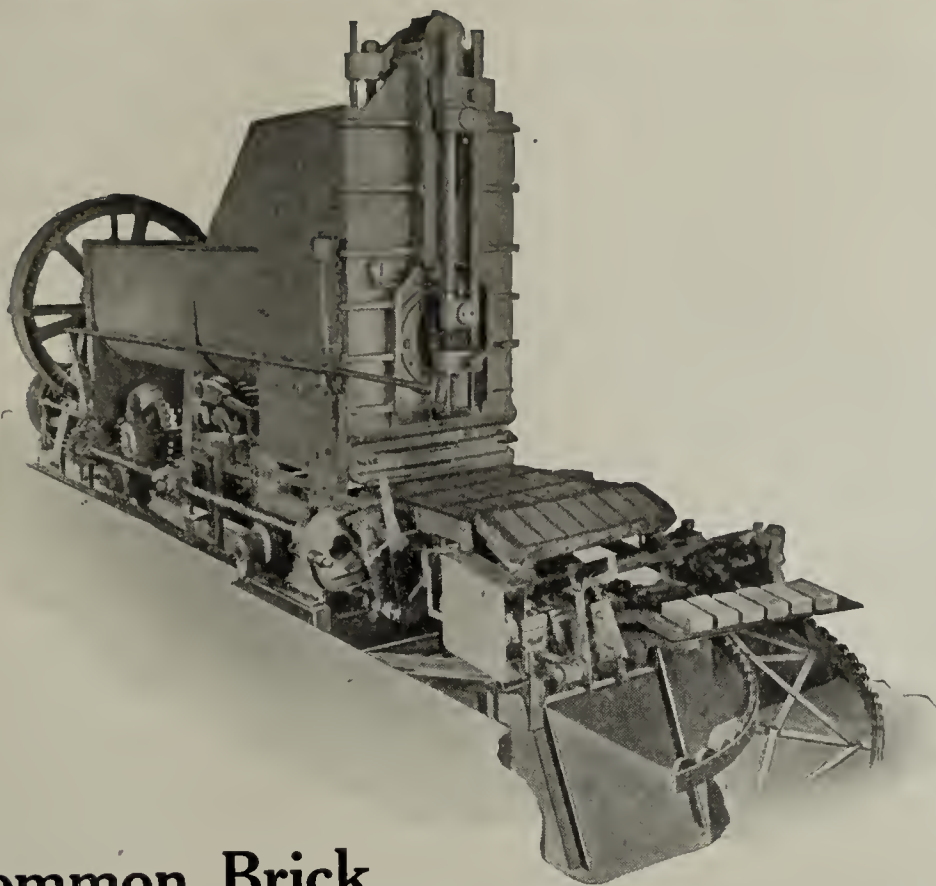
Brick's monopoly on public taste, formerly shared only with stone, has been divided by stucco, concrete, composition shingles, composition blocks and tile.

Competition against brick has been pushed by the makers of all the substitute or new materials. Manufacturers of fire and weather insulation have co-operated with them. Plasterers have been as brothers to the tile men. Lumbermen have been loud in praise of concrete. The prospective builder has, to a great degree, been educated out of thinking of brick. Brick, in many localities, is not being used as extensively as it deserves to be. It is time for it to come back to its old dominant position by a renewed interest and action of the present day Brick Manufacturers.

Improve your product. Manufacture it scientifically and economically. Maintain deliveries—and keep a stock sufficient to meet sudden demands.

Make the Architect, the Builder, and the Buyer in your locality, realize that brick is the finest, most economical, longest lived general building material ever produced.

MAKE THEM THINK OF
BRICK FIRST.



Common Brick and Fire Brick of Better Quality and Lower Cost *can be made on the same machine!*

Fire brick and building brick of higher quality and greater uniformity. More and better brick sold at a higher percentage of profit even when prices must be lowered to meet competition or stimulate demand.

The AutoBrik Machine's capacity of 6,000 to 10,000 brick an hour appeals to the men interested only in increasing production. Its ability to cut the size of the payroll and at the same time to increase production is what appeals to the practical brickmaker.

No more hunting for workers to stand the physical strain of bumping and dumping.

The clay is automatically pressed into the molds, molds are automatically delivered from the machine, automatically bumped, dumped, returned to the Mold Sander, and to their position for refilling with clay. And only one operator is required.

AutoBrik Machine

Write today for our Illustrated descriptive catalog.

LANCASTER IRON WORKS, Inc.

Lancaster, Pennsylvania, U.S.A.

Specialists In completely equipping Building Brick and Fire Brick Plants for the manufacture of brick by the Soft Mud Process.

BUILDING GOOD WILL INTO BRICK.

(Continued from page 72.)

often borne by some settler returning to the East for his family. In time the little stream of immigration, which at first was like a tiny spring trickling down the Alleghenies and Blue Ridge, became a broad current of men and women and children—the makers of the West.

What took them out past Fort Monongahela, down the Ohio, out over the Western Reserve and on to the broad prairies of the Wabash and the Sangamon?

It was the most effective form of advertising that has been found from Caxton's time until now—it was personal advertising; the personal report of Washington to the Fairfaxes, and similar reports from scores of other surveyors to other proprietors, the letters home to the Merrimac and the Kennebec, to the James and to the Catawba, the word of mouth advertising of returning Calebs who had spied out the promised land and who, true builders and prophets that they were, knew it to be the promised land, despite forests to clear, Indians to fight and the wilderness to conquer.

In this modern day, gentlemen, the same principle of good will underlying and explaining the upbuilding of the great West—indeed of every part of the country—is the principle that is behind all progress, whether in upbuilding a state or a business. But the modern world has given us marvelous agencies for applying the principle. The telegraph, telephone, fast trains, rural free delivery, give facilities for the distribution of intelligence by letter, by newspaper, by magazine that are simply bewildering. Advertising is the application of that principle to business. As markets are always essential to an industry, for the fundamental reason that distribution and production must maintain a healthy balance, this principle of advertising as a builder of good will is one that must be applied continuously. It is an essential part of business, because, markets are an essential part of business.

Washington Appreciated the Enduring Value of Building Brick.

A moment ago I was speaking of Washington and what he did as a surveyor, an empire-builder before he became "the father of his country." Let me close by refreshing your memory as to what he did when he came to build his own home. When he selected that commanding site on the Potomac, with the great sweep of the river before it, he considered how he might build a home that would be worthy of the location and that should stand through the generations, as every home should stand. So he built it largely of brick and surrounded it with brick. This almost seems another evidence of his foresight, for Mount Vernon was thus endowed with the enduring quality which was needed in the

shrine and memorial that it was to become. In tide-water Virginia, along the James and the Potomac, there are many fine old brick houses. The brick that built some of them was shipped from England, showing in what esteem our forefathers held the material that made the ivy-covered walls of their ancestral homes. Here is good will handed down from generation to generation as a tradition. Surely such good will is worth increasing, for it becomes as everlasting as the brick to which it clings. Happily for the brickmakers of today the means for increasing that good will have been multiplied a hundredfold, through the persuasive power of truth borne on printed pages into minds where markets are made.

BELGIUM A RAPIDLY-WIDENING MARKET FOR AMERICAN BRICK.

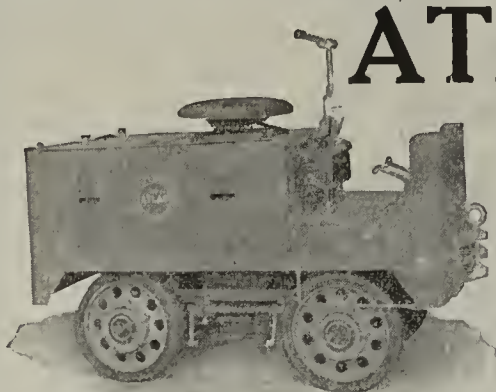
Alfred T. Marks.

AMERICAN VICE CONSUL SMITH, stationed at Antwerp, Belgium, in a communication to the U. S. State Department, emphasizes the rapidly-widening market in that country for United States building brick. Probably two-thirds of the buildings for both residential and business purposes which have been erected since the war in Belgium are of brick, and as the country has but limited facilities for manufacturing brick much is imported from France, the United States and the Netherlands. Consul Smith says that in practically all new structures in Belgium the interior walls are of brick "which vary in weight according to the strength of the foundations of the walls." In the least expensive buildings porous bricks are used for all interior walls, being plastered and pulp-boarded over. The cheapest class of houses and business buildings are built of "light, inexpensive brick."

According to Consul Smith, it would be good policy for United States brick manufacturers to form a selling company there with Belgian capital interested; or, if this is not possible, an agency should be given to a substantial firm in Brussels and sub-agencies established throughout Belgium. In advertising, a special appeal should be made to architects as well as building contractors and firms handling materials.

In view of published statements that the Dutch and others, taking advantage of the low Belgian exchange, have bought up large quantities of bricks and other building materials in Belgium, which are particularly needed at this time for the reconstruction of the devastated regions, the Belgian government has prohibited the exportation of these materials.

In order to facilitate our brick trade with Belgium, and to be of all possible assistance to our manufacturers in these lines, the Bureau of Foreign and Domestic Commerce has had prepared a list of all the more prominent architects, builders, contractors and dealers in brick and other building materials in that country, which may be obtained by our brick manufacturers from the bureau on request, if they will refer to file No. EUR-1015.

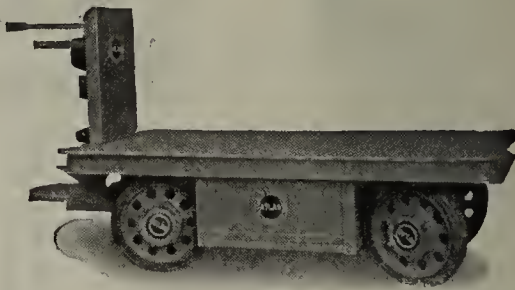


Storage Battery Tractor

ATLAS COST REDUCING EQUIPMENT

Electric Transfer Cars
Rocker Dump and Gable Bottom Cars
Storage Battery Locomotives
Electric Trucks and Tractors
Tunnel Kiln Cars

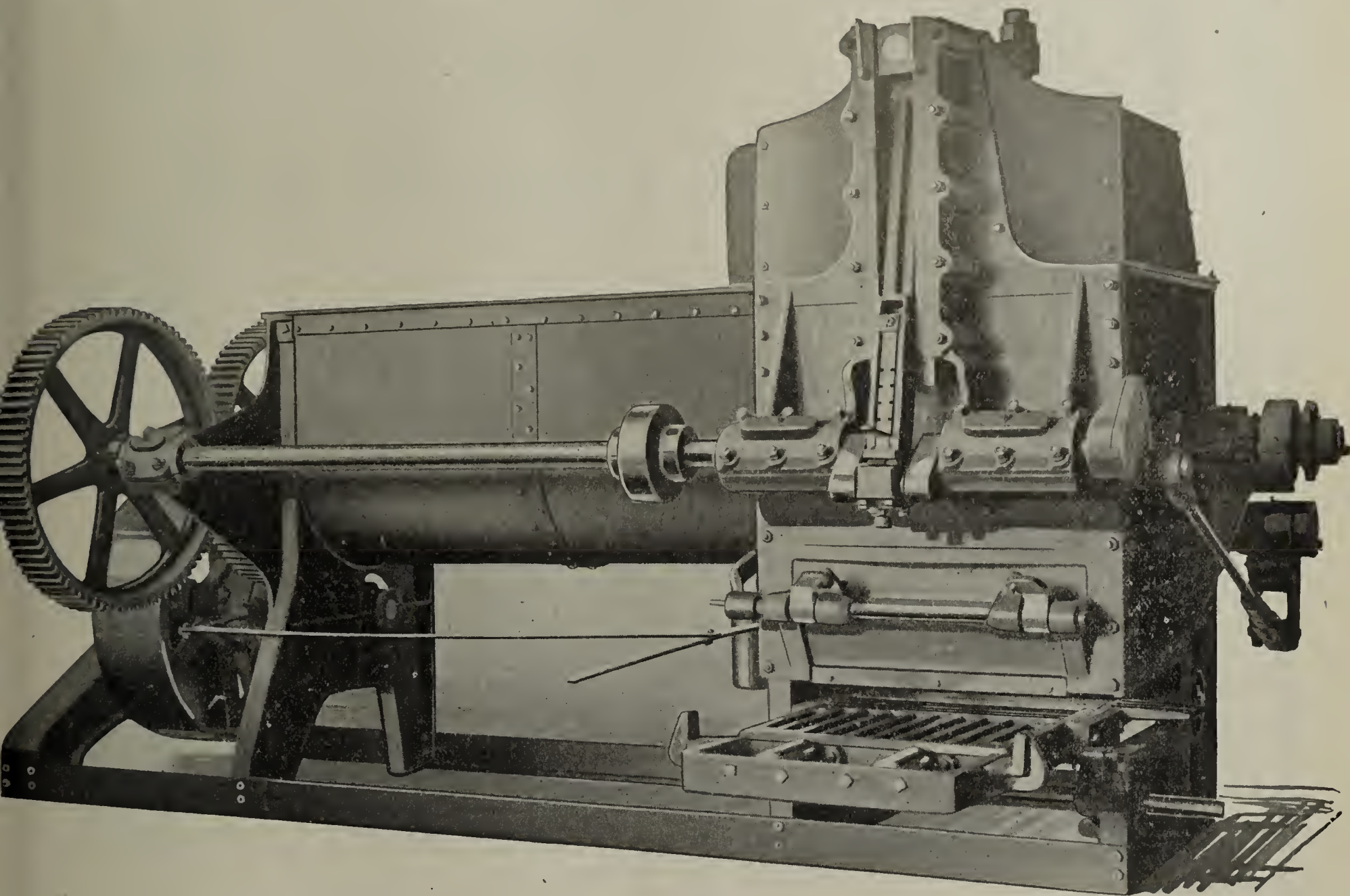
Let us solve your haulage problems.



Storage Battery Platform Truck

The Atlas Car and Manufacturing Company
Engineers Cleveland, Ohio Manufacturers

What's in a name? The word WELLINGTON stands for reliability of goods and square dealing. Always up to the minute with the latest improvements. Manufacturers of a complete line of soft mud machinery and supplies.



THE WELLINGTON SPECIAL NO. 7 The Standard in Soft-Mud Brick Machines

This No. 7 machine may be operated as a simple machine or in conjunction with the Strickland Automatic Dumping Attachment.

The machine as now made has improvements not shown in cut;
Self-striking front.
5" square pug shaft.
19" crank bearings.
8" face gears of gear analysis iron.
48"x16" friction clutch pulley.
Extra bearing stand between gears and pulleys.
Capacity up to 9 brick per stroke, 20 strokes per minute.
Parts easily accessible.

Sets conveniently without the use of bevel gears. Has never fallen down under any conditions in common or fire clay.

We manufacture Brick Machines from 10,000 to 100,000 daily capacity, weighing from 2½ tons to 14 tons.

Ask for circulars of Pipe Rack Dryers, Brick Machines, Pug-mills, Crushers, Clay Hoists, Cars, Sanders, Conveyors, Barrows, Trucks, Molds, etc.

Our erecting engineers, from plans which we prepare, have built the majority of the big modern plants in the Middle West and East. This same engineering service is at **your** command.

Our representatives at the Indianapolis and St. Louis conventions will wear **Button No. 100**. They want to meet you. Visit our display at both conventions.

THE WELLINGTON MACHINE CO. Wellington, Ohio

Mention THE CLAY-WORKER.



THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa



NEW YEAR'S OFFERINGS.

AS USUAL, THE CLAY-WORKER sanctum is decorated with a varied assortment of new calendars and souvenirs, for which we are indebted to the friendly donors. Conspicuous among the souvenirs is a desk and memo clip from Clippert Brick Company, Detroit, Mich., which is very fine. We also received a large calendar from the same source and a Christmas greeting that added to the joy of our holiday season.

THE ALTON BRICK COMPANY, Alton, Ill., over which Eben Rodgers presides, contributed a handy stamp box and pen tray, on the under side of the lid of which is a fine view of their great plant printed neatly on celluloid.

THE BONNOT COMPANY, Canton, Ohio, sent a neat memorandum book, giving illustration and descriptions of their clayworking machinery and other valuable memoranda.

E. M. FREESE & CO., Galion, Ohio, contributed a large wall calendar, the lettering and figures of which appear in white on a black background.

THE CORAL RIDGE CLAY PRODUCTS COMPANY, Louisville, Ky., contributed the largest and most gorgeous of the calendars, being a fine landscape entitled "The Gateway of a Thousand Years," to which is appended a large calendar pad, the figures appearing in white on a green background.

W. H. MCCARTHY, brick dealer, Chicago, Ill., favored us with a desk calendar of the changeable sort, the pad being enclosed in a red leather frame, lettered in gold.

UNDERHILL BRICK AND TILE CO., Rockport, Ind., selected for their calendar a rural scene, in the forefront of which are some fine shorthorn cattle, and beneath it is the inscription, "Make the Waste Acre Productive by Under-drainage, with Clay Drain Tile of Quality."

John J. Moroney & Co., Chicago, Ill., dealers in fire brick, fire clay and clayworking machinery, sent a very pretty calendar, the picture feature being a replica of the famous painting, "The Warm Southern Moon."

THE STANDARD BRICK COMPANY, Macon, Ga., of which W. E. Dunwoody, president of the National Brick Manufacturers' Association is president, issues a monthly calendar, that for January picturing "The Birthplace of a Nation," being an artistic presentation of the city hall of Philadelphia, from which William Penn looks down upon the Quakers and other good people of that city.

H. A. WHEELER, E. M., St. Louis, Mo., sent a pleasant reminder of the friendship of many years in the form of a very beautiful river scene, the chief feature being a lovely Indian maiden paddling her own canoe. It bears the inscription: "Good Luck for 1922."

F. W. FITZPATRICK, consulting architect, Chicago, Ill., another old-time pal, sent a unique greeting, an artistic sketch of his own designing.

Similar offerings came from the Idaho Fire Brick Co., Troy, Idaho; the Fort Recovery Tile Co., Fort Recovery, Ohio; the Acme Brick Co., Milwaukee, Wis.; Laclede-Christy Co., St. Louis, Mo.; the A. C. Ochs Brick and Tile Co., Springfield, Minn.; Eastern Paving Brick Association, Philadelphia, Pa.; The Bloomfield Brick Co., Bloomfield, Ind.; The Frost Mfg. Co., Galesburgh, Ill., and many, many Happy New Year and Merry Christmas greetings, from friends throughout the nation, made our Yuletide season a bright and happy one.

IOWA MAN RESIGNS.

Kenneth M. Ogden, who has been manager of the Boone Brick, Tile & Paving Company, Des Moines, Iowa, for some time, has tendered his resignation to the company and severed his relations the last of December. January 1st he assumed his new duties with the McHose Sand and Tile Company, having charge of the plants at Gowrie and Fraser, Iowa.

What is this Big Mystery No. 3



Third Annual Convention
The Common Brick Manufacturers Association of America
Hotel Statler, St. Louis
Monday, January 30 to Wednesday, February 1

TOPICS

"Construction Outlook for 1922"
"Local and State Organization"
"National and Local Advertising"
"Technical Research in Plants"
"Inside Efficiency"
"Bricklayer Co-operation"
"National Convention 1923"
"Government Tests on Brickwork"
"Combating Brick Substitutes"
"Eliminating Prison-Made Brick"
"Ideal Wall Development"
"New Contracts for 1923"
"Election of Officers"

MYSTERY NO. 3

"It shall come to pass in the year of our Lord, 1922, that the manufacturers of brick will enter into great prosperity IF=."

You can get the rest of this message at the St. Louis Convention of the Common Brick Manufacturers Association of America. It is translated from a tablet dug up in Babylonia many centuries ago. At this greatest of all brick meetings, there will be revealed a new activity proposed to instantly remove one of the barriers that has stood in your pathway of success.

The St. Louis Convention will be the largest gathering of Common Brick Manufacturers that has ever occurred in this country. This industry has taken on a new lease on life. It is propelled by hope and optimism. It sees a glorious future just ahead. There is something to meet and talk about this year, and the best brick men of the United States will be in St. Louis on January 30th, 31st and February 1st.

Get the answer to Mystery No. 3 and to a thousand other questions that vitally affect your business.

The Common Brick Manufacturers Association of America
1322 Schofield Building
CLEVELAND

P. S. Wire us at once and we'll get room accommodations for you

MARTINIQUE



NEW YORK

THE famous name Martinique is restored to this great New York hotel. But it is a *new* Martinique—new in decoration, in furnishing and in management. The charges are genuinely moderate.

Pleasant rooms as low as \$2.50. Popular club breakfasts from 45 cents to \$1.00. Substantial luncheons and dinners at \$1.25 and \$1.75 and a well prepared and quickly served selection of satisfying dishes a la carte at new prices. *Affiliated with Hotel McAlpin.*

Frank E. Jago, Resident Manager



32nd Street and Broadway

Written for THE CLAY-WORKER.

OUR WORLD-TRADE IN POTTERY.

ACCORDING to the Bureau of Foreign and Domestic Commerce, Department of Commerce, two and one-half times as much German china and porcelain reached the United States in the eleven months from January to November, inclusive, this year, on the basis of declared values, as in the first eleven months of 1920—a gain that more than accounted for the increase of \$904,630 in the total value of the American imports of this class of wares during the period. French china also came to the United States in greater amount, but Japan was credited with a smaller aggregate value than in the preceding year.

Plain earthenware and crockery imports increased by \$106,400 over the first eleven months of 1920, and decorated by \$50,231. Other ware of this nature was purchased abroad by the United States to a smaller extent, the eleven months' total being \$124,053 below that for the corresponding period of 1920.

While the preliminary official figures do not show the quantity of chinaware and earthenware imported, it is not unlikely, in view of the price adjustments that are beginning to appear in the world's invoices, that some part of the 1921 increase represents larger quantities as well.

The bureau states that American ceramic products have yet to win for themselves a prominent place in the foreign field. Exports fall much below imports in value, and of the shipments made, more than half consists of bricks. It should be explained, the bureau continues, that this brick traffic is for the most part with the nearby markets of Canada, Mexico and Cuba.

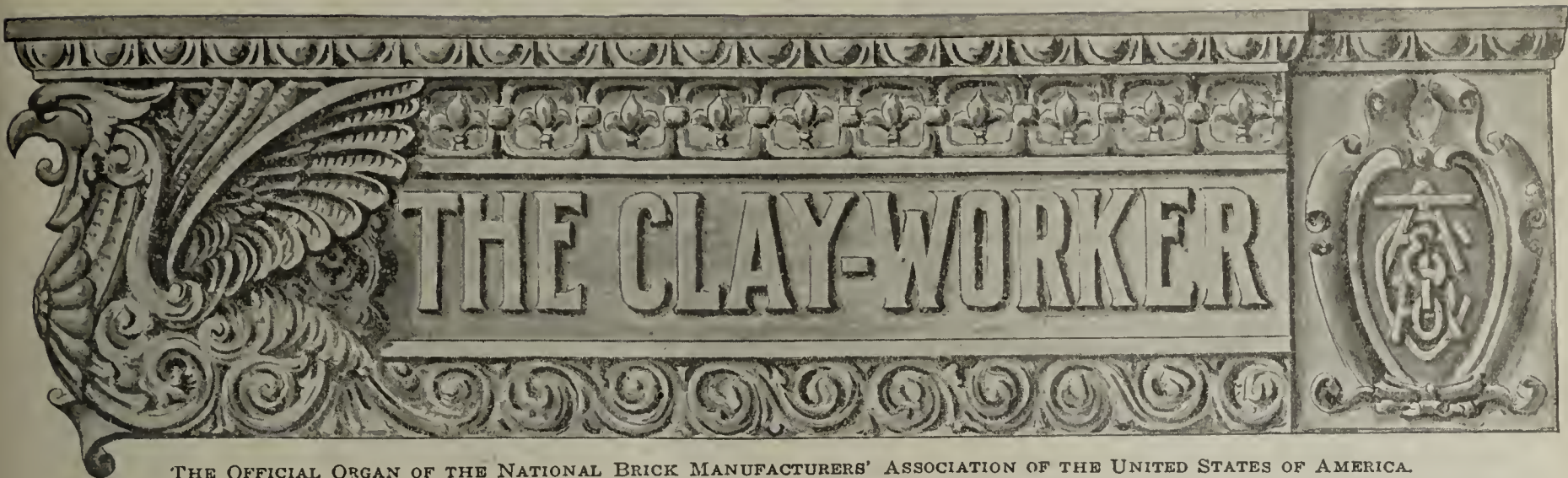
Aggregate export values for the eleven months were less than in the corresponding period of 1920 for all classifications except building bricks, which increased by 16 per cent.

Announcement is made by the Bureau of Foreign and Domestic Commerce that, beginning with January of this year, it will begin a much more detailed classification of American pottery exports, under which bricks and tiles will be separately stated as "fire-clay bricks," "silica bricks," "other refractory bricks," "refractory shapes," "building bricks," "hollow building tile," and "wall and floor tiles." China and porcelain ware will be listed as table, toilet or kitchen ware, electrical porcelain, and "other" china and porcelain ware, and earthen and stoneware as table, toilet or kitchen ware, sanitary earthenware, chemical stoneware, and "other." Furthermore, quantities will be given in units of number or weight. This will enable our manufacturers in these lines to secure more definite and accurate information as to both exports and imports.

MARKS.

GOVERNMENT ISSUES SAFETY AND HEALTH ALMANAC.

The Miners' Safety and Health Almanac for 1922 has been issued by the United States Bureau of Mines, in co-operation with the United States Public Health Service. The Almanac, which has been compiled by R. C. Williams, Past Assistant Surgeon, U. S. Public Health Service, besides containing the usual fund of information concerning sun, moon, wind and weather, preaches crisply and snappily, the doctrine of Safety First. The Almanac is freely illustrated and contains many articles by experts in safety, health and sanitation problems. It is intended for circulation among the million coal and metal miners and quarry workers in the United States. Copies may be obtained from the Bureau of Mines, Washington, D. C.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 77

INDIANAPOLIS, FEBRUARY 15, 1922.

No. 2



OFFICIAL REPORT OF THIRTY-SIXTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION, INDIANAPOLIS, IND., JANUARY 25, 26, 27, 1922.*

THE GREATEST OF ALL N. B. M. A. CONVENTIONS.

THE PREDICTION that the Thirty-sixth annual meeting of the National Brick Manufacturers' Association would be one of the most successful in the history of that organization, came true. The attendance was good, there being more than three hundred present convention week, including the ladies, and they are always properly considered a part and parcel of the annual gathering. The meeting would not be a success without them; they participate in the sessions as well as the social functions and have done so for more than a quarter of a century.

Much Interest Shown In Very Constructive Program.

All circumstances considered, the attendance was most gratifying. Mere numbers is not the essential factor in a successful trade convention. More important by far is the active interest taken in the proceedings, and the live up-to-date character of the program, and in these particulars, the 1922 National convention was a record breaker.

A number of high spots were touched which characterized the meeting as one of virile interest to the entire clay craft. A very notable incident was the telegraphic message from President Harding conveying greetings and good wishes. Such a message from the Chief Executive of the Nation made a profound impression, the Association responded spontaneously by electing President Harding an honorary member of the Association. This was especially appropriate as in his early youth President Harding worked on a brickyard as off bearer.

Unique Invitation to President Harding.

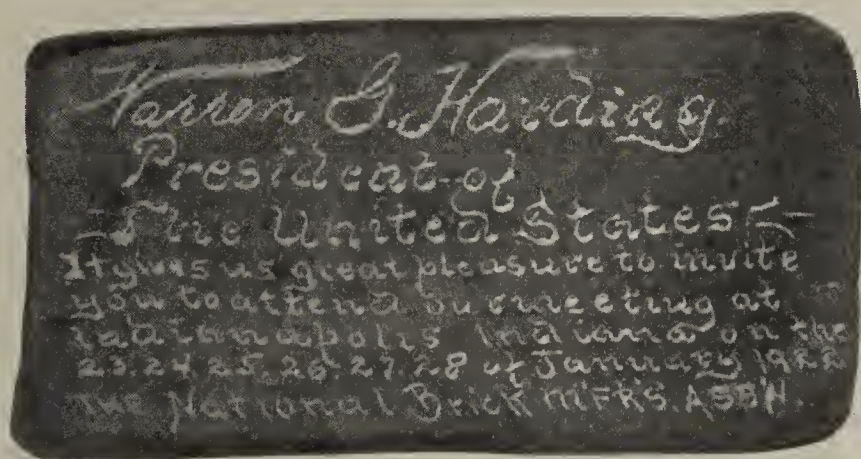
The members were shown and took great interest in the unique invitation to the President requesting his presence at

the convention, which was in the form of clay tablet or burned brick. The idea originated with William Lucktenberg, and the brick was made and burned in the kilns of the Burton-Townsend Co., Zanesville, Ohio. It was presented to the President in person by Secretary Randall who was told by President Harding himself of his real interest in the brick industry by reason of his early recollections. Boyhood associations, hardships and pleasures, are never forgotten. The President is no exception, indeed he is very human. Therein lies his tremendous influence with his fellow men. The wonderful achievement of disarmament, that will lead to permanent peace and good will the world over, is due to his great qualities of heart no less than to his great wisdom and statesmanship.

It is indeed a great honor to enroll so great and good a man upon the Association's honor roll.

To Make Common Brick Into Face Brick.

Another remarkable feature of the convention was the contribution of Major E. Gates of Chicago, son of our revered "button-holer" W. D. Gates. The "Transmogrification of the Common Building Brick" was a theme of intense interest, and the demonstration of what can be accomplished by the Gates treatment, transforming the commonest of common brick into



Fac Simile of Clay Brick Tablet Inscribes and Burned at the Plant of Burton Townsend Company, Zanesville, Ohio, Attractively Boxed and Presented to President Harding in Person by Secretary Randall.

fine, impervious and vari-colored product, was a revelation. The progress is so simple and inexpensive that it may well become universal, enabling common brick plants to meet every demand for building brick in their respective neighborhood or market. This is a condition to be devoutly desired,

*Copyrighted, 1922, by National Brick Manufacturers' Ass'n.

for it will result in the universal use of brick for building homes and all other structures.

To Revolutionize Bricklaying and Increase Demand.

Last and best of all the high spots touched, many of the members thought, was the big surprise promised by the Secretary, the demonstration of the Mann trowel, a new and simple invention by the use of which, it is claimed, brick-building may be speeded up and cheapened and brick buildings may be constructed at a less first cost than those of frame or other less desirable materials. When the benefits of such a device is fully appreciated by the craft and the building public in general, they will rise up and acclaim the inventor a benefactor.

Convention Big Success.

With these tremendous innovations marking the regular proceedings of the N. B. M. A., its members and official family may well be pardoned for great joy in the progress achieved at the Hoosier convention. For once our critics are silenced and the progressive spirit of the "Daddy" association puts it beyond reproach, and proves beyond all doubt or cavil that it is keeping step with the march of progress. Now, more than ever, should the brick and tile manufacturers of the country join in its support, heartily and enthusiastically aid in extending its membership and usefulness.

The social features of the convention were remarkably pleasing. The Smokerette was most enjoyable, so everybody said, and the Banquet was an exceedingly happy combination of music and oratory. The toastmaster, ex-Senator Albert J. Beveridge delighted the audience by his wit and eloquence. His more serious references to the present day conditions in business and legislative affairs made a profound impression. The other toasters were eloquent, as our readers will perceive when the full text of their remarks are given in a subsequent issue.

First Session.

Wednesday, January 25, 1922.

President Dunwody: Gentlemen of the convention, the thirty-sixth annual convention of the National Brick Manufacturers' Association will come to order. We will be led in prayer by the Reverend J. F. Rainier, of Indianapolis.

The Opening Prayer.

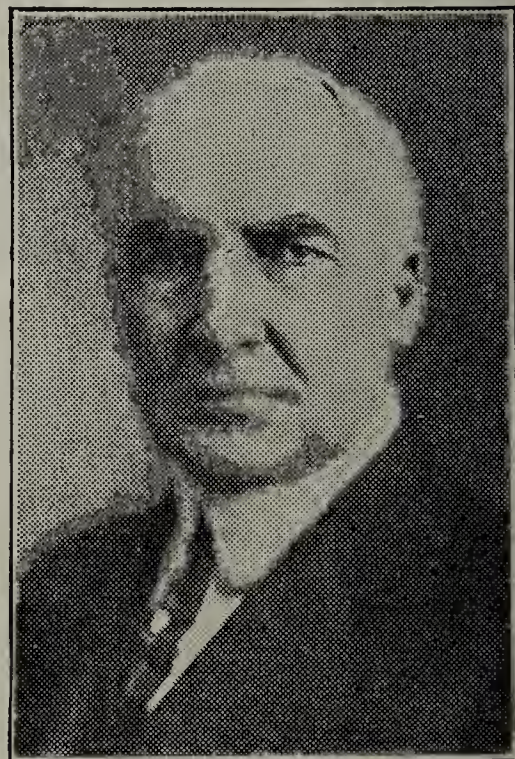
Reverend J. F. Rainier: Our Heavenly Father, we call upon thy Holy Name in prayer, invoking thy blessing upon this assembly met together today, upon the Brick Manufacturers' Convention, one of the greatest conventions of its kind in this country. We pray Thee Lord that thy richest and tenderest blessings may rest upon the deliberations of this convention. We pray Thee that thy wisdom may be meted out from Heaven, and thy blessing may rest upon everything that may be undertaken. We know that wisdom is vested in Thee. All thought and all knowledge belongeth to Thee. All our vast attempts at knowledge and wisdom are but fragments compared to Thy wisdom and Thy knowledge. Therefore, we pray Thee Lord that Thou will bequeath to us the heritage of knowledge and righteousness, new understanding, and assist us in all the deliberations of this hour. We thank Thee Lord, for this splendid company of men and women, we thank Thee, our Father, for the privilege of having these men and these women here, coming as they do from various parts of this country. We welcome them, our Father, to one of the best cities in the United States. We welcome them, our Father, to a city interested in everything good, everything that tends to the uplifting of mankind. Grant, Oh God, thy richest blessing may rest upon each one. We feel Thou art interested in every endeavor they may set forth. We thank Thee for the great miracles that have occurred in the past,

revelations of art and science and philosophy, and the achievements made in the manufacturing industries, comparing as we do the crude efforts put forth in bygone days and the splendid achievements of this century, and as we look back to the achievements of the past, we thank Thee for what hast been wrought, and we cannot help but exclaim "What Thou hast wrought." We remember the achievements of today may be but fragmentary as compared with the achievements of tomorrow. We pray Thy glory may be manifest in everything, and there may be a stimulation of Christian belief and endeavor, and the heritage of the best things in life may be the heritage of each and every one. For Jesus' sake we ask, Amen.

President Dunwody: Gentlemen, we will be welcomed to the City of Indianapolis by Honorable S. L. Shank, Mayor of the city. I have the pleasure of introducing Mayor Shank. (Applause.)

Welcome to Indianapolis.

Mayor S. L. Shank: Mr. President, ladies and gentlemen, I want to say to you this is the first delegation I have had the pleasure of welcoming to Indianapolis since I was elected Mayor. I am going to give way in the future to Mr. Rainer,



Honorable Warren G. Harding, President of the United States, Elected an Honorary Member of the N. B. M. A.

who gave up the ministry to take a very important place on one of my boards. He is a Democrat and I am a Republican. I am going to let him take care of the Democrats and I will look after the Republicans. It was a great sacrifice for him to give up his work, but I have tried my level best to get the best men possible, and Brother Rainier came to me and said, "I would like to be connected with you. Give me a position that don't pay any salary." I picked out the worst I had, and he has got it.

I am glad to see you men and women here in Indianapolis. I am afraid to tell you we have the finest city, and I will tell you why. We Hoosiers are proud of Indianapolis. I was out in Pasadena two years ago, and I was over in Long Island, we went clear across the country, we saw some beautiful cities, and most of the cities of the United States are beautiful. At that time Indianapolis—well, Illinois street out here was full of chuck holes, and the whole town was filthy and dirty, but as our train pulled into the Union Station, I said to my wife, "Look at that street, dirty as it is, it looks better to me. Indianapolis looks better to me than the most beautiful thoroughfare in any of the cities we have been."

Indianapolis is the greatest inland city, and those of us who live here love our town, but sometimes it don't do to brag too much. I was down in Atlanta, and I said something to one of the stage hands about Atlanta. I said, "Indianapolis is a dandy town. We have some wonderful homes." He said, "You go out and look at Colonel Peltier's residence here in Atlanta." We took a street car and went out and looked around, and say, do you know, our best residence here would not have made a barn for that place. That is why I haven't said anything about our beautiful residences. That Atlanta man even had marble steps and brussels carpets in the stable and a trolley car to run around the grounds—now, I didn't see these things, but they told me about them—so I am afraid to tell you about the beautiful things in Indianapolis, and yet I think we have one of the prettiest cities in the United States. If the ladies would care, and you men want to get away from your wives for a while, we will send some cars over here to take the ladies through the parks and boulevards. We are



Honorable Samuel Lewis Shank.

having now one of the coldest days we have had, and yet when I was in St. Paul one time they told me 2 degrees below there was not as cold as Zero here, but I don't know about that. Anyway, the ladies can wrap up warm, and we will be glad to show them the city.

I do not know what else I can say or do except to offer you the keys of the city, the courtesies of Indianapolis. One of the first things we instructed our policemen, was to be especially courteous to visitors, to our guests. You don't know all of our rules and laws—to tell the truth I don't know them myself. I was "pinched" five times myself last year for not knowing the laws about parking, etc. But if any of you get in trouble I will go down personally and see the judge, although he and I have not had any understanding as yet. You men are in the brick business. Personally I have always been for brick pavements, and yet it seems the price has been too high, and we have had asphalt and cement, or something like that. I was up in Cleveland not long ago, and they have the best roads I ever drove over in my life. They may have had better care than our streets. You can leave Indianapolis and go as far as French Lick—it may cost you something, some of you have been down there—and you can drive forty or fifty miles and take no chances. In Indiana we are trying

to get good roads, and in Indianapolis good streets, and I am going to spend every cent in my power to spend—especially in the North Side where I did not get any votes—we are going to pave every street and alley in that section. (Laughter). I am going to try to help out the paving business, though it may not be brick, all of it.

You are welcome here men. Don't get mixed up with any "white mule," it will put you out of business—and I am trying to put all of them out of business. But you are welcome, and I will try to take care of the ladies tomorrow, if you will let me know how many there are here. (Applause).

President Dunwody: The response to Mayor Shank will be made by Mr. L. L. Stephenson of Lovick, Ala.

Response to Address of Welcome.

L. L. Stephenson, Lovick, Ala.: That certainly was a courteous welcome we got from the Mayor, and from the way he delivered it, I think he made it up himself. I am so accustomed to speaking in public, as you will discover before I get through, and I make so many speeches, I sometimes get them mixed, and I have to make a few notes to keep on the main line. I think he made some of these brickmakers feel so good they will think something about locating around here. I think though if they do, they had better consult some of these Indianapolis brickmakers for they will tell a different tale to what the Mayor did. I am pretty sure of that from what I have already heard. We are delighted at the magnificent display of brick you have all over the city. It is an inspiration to go around and look at these fine buildings, especially for a brick man as deeply interested in bricks as I am. The luxurious trains coming into Indianapolis—and I understand Indianapolis is one of the largest railroad centers in the country, and as I understand it, the trains run both way, so if we don't go broke we can go back home. You have magnificent theatres. I went to one last night and enjoyed it very much when I could keep my face dry, the play was so pathetic, and this morning my wife informed me she did not sleep at all thinking about what a terrible thing it would be if we should have some domestic difficulties, and I think she has made up her mind to treat me better from now on. (Laughter).

I am afraid your Honorable Mayor is stalling on the job, I did not know he was the same man we had heard about. I find he has an enviable reputation that goes far beyond his own city and state border. Down in Alabama, my home state, we are doing a lot in the way of raising peanuts, peanut politicians, and sweet potatoes. We are building sweet potato curing houses all over the state, and with Henry Ford going down shortly to take charge of our fertilizer production and cut the price half in two, we think we are going to be very much in need of some expert salesmen to conduct a publicity campaign to dispose of these products; a marketing expert, as it were. So if Indianapolis don't keep a sharp eye on her Mayor, they will be likely to lose him. (Laughter).

Right here I want to say I think the brick manufacturers fail to make the most of their opportunity when they permit such a clamor for more homes, more churches, more public buildings, etc. We know we have the best building material in the world. We never felt it was necessary but we are failing to make the truth known to the public. I have been making brick for many years, and way back there we had a little crippled editor of our weekly paper in the little town in which I live. He would come hobbling around occasionally and say, "Stephenson, give me an ad for your brick." I would say, "Why advertise brick? You can look out of the windows and see nothing but brick. What do you want to advertise brick for?" I have come to think differently about that. The brick manufacturers have never taken advantage of publicity as they should. I attended an N. B. M. A. meeting many years

ago in Rochester, to the best of my recollection, and they had a publicity expert there to make a speech. We had an auxiliary association and they were talking about raising from \$10,000 to \$20,000 for publicity, covering the whole United States, going into it wholesale. This gentleman in his address, we were all there, all kind of stuck out in front, feeling chesty over the prospect of spending so much money, and the gentleman told us if that was in accord with our views and our policy to raise money, his advice to us would be to spend that money educating ourselves. I went home highly indignant, he was throwing cold water on us and made light of us, but after several years had passed I became convinced he was right. I am convinced you can sell an inferior product by advertising and by intelligent publicity leave a superior article tied at the stake. There is no question at all about it to my mind. It has been demonstrated to us time and again. Brick people never feel there are other people who are not interested in brick, know brick as they do. That is right where they fell down. Many people not interested in brick, never give brick a thought. Everywhere they look they see brick, but they think as a matter of course it is just brick. One obstacle in the way of brick always has been the exalted idea in the minds of the people about the cost of brick. I don't think the cost of brick in houses is to be compared with the price of brick for paving streets which the honorable Mayor talked about. I heard a man say here in the hotel yesterday that he had discovered a way of laying brick in the wall whereby he could build a house as cheap as he could a frame house. That is music to my ears because the laying



L. L. Stephenson, Lovick, Ala.

of brick has been a serious drawback to the entire business for many years, and I hope we will have a demonstration of this bricklaying stunt before the convention is over. The brick business is a little peculiar in that the brick manufacturers are scattered broadcast all over the country, all of whom benefit from any general publicity campaign by any Association whether they contribute to it or not. It is impossible to keep those who do not contribute from reaping the benefits from any general publicity campaign. There are possibly a few who withhold their support for this particular reason, but I cannot believe very many do. Now, however, brick people are making considerable progress along this line without the assistance of a great many manufacturers. This refers both to the face and common brick. If we could interest nearly all of them to contribute with their moral support, if not with their money, and tell the people about brick and adopt some of the methods that has been adopted previously in the sale of potatoes and other commodities, we think the brick business would make strides that would do us all good.

It is indeed a pleasure for me to be here and meet so many old friends. Again I thank the Mayor for his cordial words of welcome. (Applause).

President Dunwody: His Honor the Mayor is a good politician and reminds me of a man in our county who was running for sheriff and he held a meeting out in front of his house. He walked out when the crowd had gathered and said, "Boys, my name is John Parley. I am running for sheriff. You all

know that. You fellows who are going to vote for me step to one side." A bunch of them did so. He said, "Fellows, I appreciate your support, I certainly do, that's fine. Now, you other fellows, come on in, I want to give you a drink." (Laughter.) The Mayor is going to give the fellows who did not vote for him good streets. The next in order is the annual address of the president. Before I get through with my address, some of you fellows may say, "Dunwody thinks he has been everywhere and seen everything." But I have not been everywhere and seen everything. Maybe some of you have heard the story of the man who was in a saloon, and he spoke up and said, "I've been everywhere and seen everything." Nobody paid any attention to him, and he said it again, "I've been everywhere and seen everything," and still no one paid any attention to him, and he said it a third time, "I've been everywhere and seen everything." Finally a fellow got up and said, "Look here my friend, have you ever had delirium tremens?" and the first speaker said, "Indeed I haven't, what do you mean by asking me such a question?" "Well, then, you've not been no where and you've not seen nothing." (Laughter and applause).

PRESIDENT DUNWODY'S ADDRESS.

Ladies and Gentlemen of the National Brick Manufacturers' Association:

We have come together in the 36th Annual Convention of the National Brick Manufacturers' Association of America, and ap-



President W. E. Dunwody, Macon, Ga.

preciate the splendid welcome that has been accorded us by his Honor, the Mayor of Indianapolis.

We have just closed another year, one which has been trying to all of us, but there is this consolation, that we are nearer by one year to the time when we will again enjoy prosperity.

The greatest question in your minds and in the minds of the general business world is, what has the future in store for us? And more particularly, what will the year 1922 mean to us?

You will pardon me for expressing my personal views, which may not be uninteresting as being the views of one who hails from a distant section of the country, where the per capita wealth is somewhat less than it is in your own section. I am expecting a gradual improvement of business notwithstanding the fact that when you consider the usually accepted factors, the outlook is not what we would like it to be, especially in the Southland.

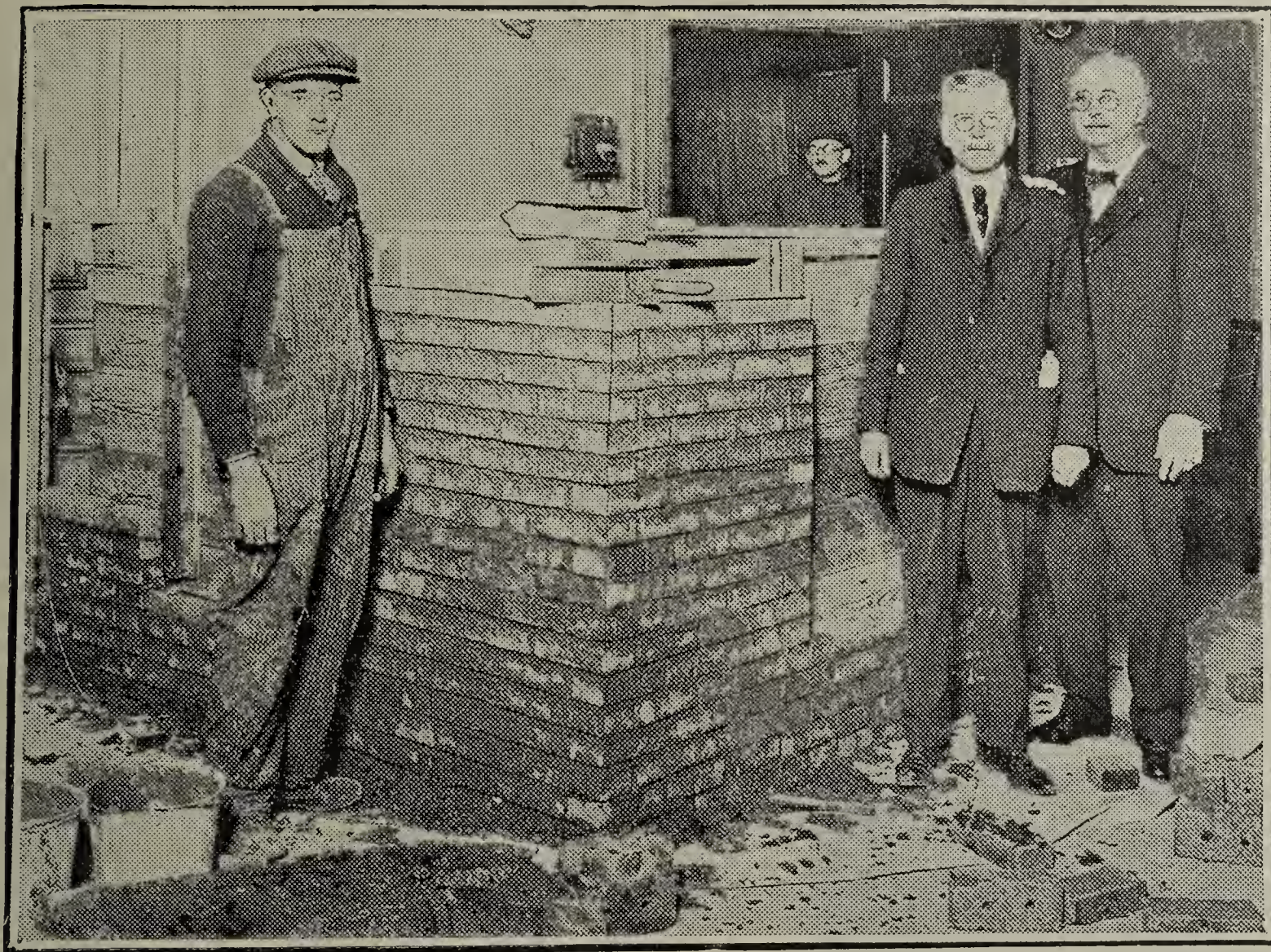
You have heard much of the devastation brought about by the Boll Weevil in the South and the disastrous results, but in my opinion, the Boll Weevil (which by the way, is a little insect about the size of a house fly) will prove, and in fact, has already proved a blessing in disguise. It has caused our people to examine themselves, not only as to their resources and to their methods of conducting their affairs, but also as to their mutual responsibilities, with the result that we are beginning the year in the South with a fuller realization of its potentialities, with a more accurate knowledge of our short-comings, and with the universally expressed determination that every man will give to his neighbor, so far as in him lies, his full co-operation; and so it should be with us, as Brick Manufacturers.

We cannot, of course, engage in division of territory, nor fix prices, nor even operate on what has been known as the open price system, but we can co-operate with each other in the effort to elevate the morale of our craft, and bring to it the same dignity that every business should have, and which in some instances, the Brick Manufacturer has failed to acquire.

Standardization of Products.

Much has been written during the past year in regard to cutting costs and increasing efficiency, and much has been done in

NEW TROWEL SPEEDS UP BRICKLAYING.



A brick wall laid in thirty minutes with the Mann trowel which, it is said, would have taken a skilled bricklayer an hour or more. The trowel is lying on the wall. Oscar F. Mann, the inventor, is at the right in the photograph, with Theodore A. Randall, secretary of the National Brick Manufacturers' Association, behind him.

BY THEODORE A. RANDALL.

Bricklaying is one of the few important trades in which there has been little or no improvement in change of method for many ages. The process is so simple and yet so exacting that it has been accepted as a finality, almost, that there could be little or no change in the manner of doing the work. It seemed there was no possible improvement or variation from the established method of laying brick by hand.

For centuries the bricklayers' trade has been handed down or passed along from father to son, for generation after generation with no change or departure, until it has become an accepted idea that the work must be done forever and always just as it has been done in the past.

Now comes an Indiana genius, Oscar F. Mann, 4309 Central avenue, a home

builder, with a simple contrivance in the form of a trowel, that enables bricklayers to lay double the amount of brick per day with less labor and effort than is possible by the old primitive tool, thus an age old method will have to give way before Yankee ingenuity.

Bricklayers are among the highest paid workmen of the building trades, due to the fact that the work is both laborious and requires much skill and training, and besides bricklayers can only work a part of the year, winter time being idle time for them, as a general rule. For these reasons the rate of wage has been advanced over that paid other workmen in the building line. That is the chief reason why a brick house costs more than a frame house.

This will be altered by the simple invention of the Mann trowel, but the bricklayer himself will have no cause for complaint. There need be no reduction in wages, though his labor will be lessened by this improved tool, for the

work is made easier by it and two or three times as many brick may be laid in a given time as compared with the present method.

This means a decided reduction in the cost of erecting brick buildings and consequently there will be many more brick homes built. The crying need of the hour is more and better homes, and the Mann trowel, through a simple tool, will prove a mighty factor for the betterment of building conditions. It will shorten the time required to construct brick buildings by one-half and lower the cost in the same proportion. A house that would take a month to build under the old method will now take only half that time.

A demonstration was made by Mr. Mann at the Claypool hotel before brick manufacturers attending the annual national convention of their organization. A brick wall was erected, which proved to the satisfaction of all present that Mr. Mann's claims for speed and accuracy were justified.

From Indianapolis Star, Jan. 30, 1922.

This simple invention will triple the Brick Building of the Nation.

This story, with illustration, is being widely circulated throughout the country. If you wish to boost this splendid revolutionizing proposition in your territory, write to the Secretary of the N. B. M. A. for photograph and typewritten story. Same will be sent gratis upon request. Give this idea the greatest publicity possible.

that direction, and our efforts should continue along this line; but first, we should standardize our products, in order that when a man asks for a quotation on brick, he will understand the basis of our quotations. This rule has been disregarded to a great extent in the past. One man reduces the size of his brick below the standard, and another increases. In both cases, the result is damage, not only to him who engages in this poorly conceived practice, but it also brings the craft into disrepute, and leads the buying public to the conclusion that the Brick Manufacturer is either unfair or unbusiness-like.

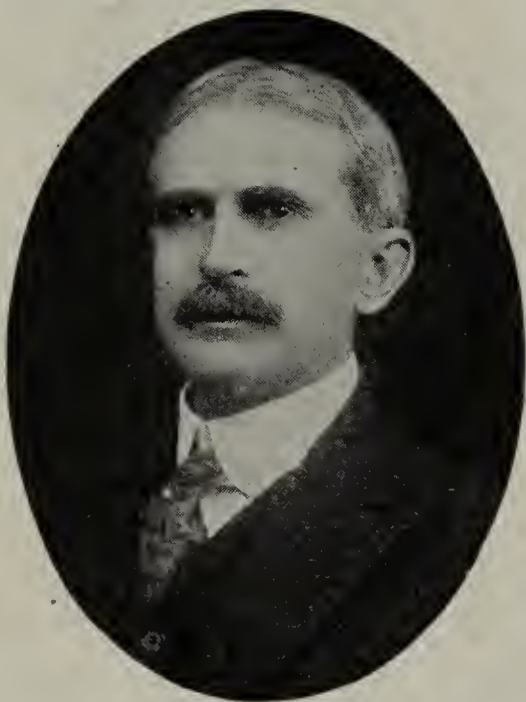
I strongly recommend the adoption of a uniform cost system, and the adoption of the N. B. M. A. standard size for brick, and I am very anxious to see brick on the basis of their value, with the realization that "a brick is not always a brick." If we insisted that our customers would consider the quality of our brick and its many points of superiority over other building materials, we would be compelled to turn out the best brick. This would result in our taking more pride in our products, and in that way raise the standard of our business.

Pride in one's product is very necessary to progress. We cannot stand still, and without pride in the quality of our goods, we soon retrograde. The brick manufacturer who makes an inferior brick is a discredit to the entire craft, and brings the product into general disrepute, offering an easy mark for cement products and other building materials.

Too many manufacturers permit the price to be the controlling factor, instead of accentuating the quality of their product. My company's motto is quality. Our common brick is a trade-marked product, as are also the several different styles of face brick that we manufacture, and the same is true of our hollow building block. We base our selling price on the cost of the product, which is figured by an accurate cost system, plus a reasonable profit, without regard to prices made by other manufacturers as far as it is possible to do.

Benefits of Uniform Cost System.

If the members of our Association would adopt a uniform cost system and base their business on the results of this system,



President-Elect, T. E. Wilson, Pittsburgh, Pa.

the ruinous competition, which is now so prevalent, would be reduced to a minimum, and many of the plants, which are now struggling for an existence, would be operated on a paying basis.

Georgia railroads have recently proposed a further advance on the already exorbitant freight rates on brick, and in leading the opposition, I secured some figures in regard to the brick industry, with which some of you may be familiar, but which will no doubt be a surprise to others.

These statistics are as follows:

In the year 1900 there were 6400 brick plants in the United States. In 1921 this number had been reduced to 2000. In passing, let me ask that you ask yourselves why the number of plants has been so greatly reduced. The highest production of brick was in the year 1909, which showed nine billion. In 1914 this had been reduced to seven billion; in 1918 to five billion; in 1919 to three and one-half billion and 1920 to three billion. This indicates to me that brick is steadily losing out in favor of other building material, and is conclusive evidence of the necessity for better business methods in the conduct of our business.

The trade-mark name of my company's common brick is "Duro," and our ambition is to make "Duro" common building brick so much better than any other brick sold in our section that our competitors will have to wait until our stock is exhausted before they can hope to market their products, and we recommend to them the same ambition.

When we have been brought to the realization that we must make the highest graded product possible, and when we take the same pride in our product that other manufacturers take, in theirs, we will be more respected, and we will be able to com-

pete more successfully with other building materials, and will become the leaders in the manufacture and sale of fire resisting building materials, which place is rightfully ours, but which we have lost by our own carelessness and lack of vision.

Vision and How to Get It.

Where there is no vision the people die, and if we are to have vision, we must have information and inspiration, and one of the greatest sources of both of these necessities is attendance upon the meetings of the National Brick Manufacturers' Association.

The delegates to these conventions are the leaders in our craft, and we can therefore approach each other for information on any subject connected with the manufacture and sale of brick, with the absolute assurance that we will receive information that will be of value to us.

I hope that all of our members who have matters on which they are seeking information will accept the suggestion made by our Secretary; that any member desiring information on any subject connected with the manufacture of brick may obtain same by submitting the question in writing to the Secretary, and I will add a further suggestion that in submitting the question, you give your name, your delegate number, and the number of your room in the hotel, so that any one interested in the same subject may know where to find you to discuss it with you.

In closing let me say that I appreciate with peculiar pleasure the honor of having been President of your organization for the past twelve months, and the pleasure has been accentuated by the fact that I was placed in the position by a body of gentlemen, the majority of whom come from a section far distant from my own Southland.

I have not been able to do as much as I had hoped, but I appreciate more than ever the importance of the National Brick Manufacturers' Association, and the splendid work it has done, is doing and will continue to do for years to come.

I thank you for your kind consideration and co-operation during my term of office. (Applause).

President Dunwody: We will now have the report of our Treasurer, John W. Sibley of Birmingham, Ala.

TREASURER SIBLEY'S REPORT.

To The Officers and Members of National Brick Mfrs. Association;

It is with a feeling of great joy that I am permitted to be present at another Convention after being deprived of that pleasure and privilege for the past two years by Providential causes.

You will I am sure be equally gratified with me to know that despite the awful depression in all lines of business during the past year the Association's finances are in a much improved condition and after meeting all obligations we are adding to our surplus \$273.62, making the net balance in the Treasury the sum of \$525.82.

This may seem incredible to most of you, but to the boys from Dixie where the price of the fleecy staple advanced so handsomely last year when the Government released the pressure, it is as plausible as expressed in the verses an old darkey was singing on his way home from work.

"The Bumble Bee is a great big bug—
The little Bee makes the honey,
The "nigger" plants the cotton and corn,
And the white-folks get the money."

But that reminds me of the story of the old darkey who said that "Appearances am some time deceivin'."

He met a friend on the street and hailed him with:

"Nigger, that was a mighty fine watch you had on Sunday night."

"How did you know I had eny watch, Sambo?"

"Didn't I see dat fine gold chain hangin' from your vest?"

"Huh, suppose you see a halter 'roun' my neck, would you say I had a hoss inside me?"

It is my pleasure to hand you herewith a statement of Receipts and Disbursements for the year just ended.

RECEIPTS AND DISBURSEMENTS ACCOUNT THIRTY-FIFTH ANNUAL CONVENTION, NATIONAL BRICK MANUFACTURERS' ASSOCIATION, FEBRUARY 1, 2, 3, 4, 1921.

RECEIPTS.

Balance on hand, 1920		\$ 252.20
Membership fees, 1921	\$3,470.00	
Books sold, etc	95.02	
Total Income		3,565.02
		\$3,817.22

DISBURSEMENTS.

Paid for Convention Program, Mailing, etc., per voucher	\$ 215.50
Paid for Convention Report, Mailing, etc., per voucher	375.00
Paid for Membership Am. Soc. Testing Ma- terials, per voucher	15.00
Paid for Membership Chamber of Commerce, per voucher	20.00
Paid for Lantern Slides	19.00
Paid for Engrossing Membership Certificates, per voucher	11.80

Paid for Leaflets, "Purposes and Benefits," per voucher	13.25
Paid for Leaflets, "Business, Retrospect & Prospect," per voucher	38.00
Paid for Leaflets 60%, (Dunwody), per voucher	30.00
Paid for Miscellaneous Printing, per voucher....	268.00
Paid for Postage, Telegrams, Expressage, per voucher	174.69
Paid for Com. on Tech. Investigation Quest., per voucher	98.00
Paid for Incidental Expenses, per voucher.....	63.16
Paid for Clerk Hire, per voucher	300.00
Paid for Secretary's Annual Allowance, per voucher	1,200.00
Paid for Assistant Secretary's Salary, per voucher	200.00
Paid for Traveling Expenses	250.00
Total Disbursements	\$3,291.40
Balance in Treasury	525.82

RECAPITULATION.

Balance in Treasury, 1920	\$ 252.20
Total Receipts, 1921	\$3,565.02
Total Disbursements, 1921	3,291.40
	273.62
Total balance in Treasury	\$ 525.82
Respectfully submitted, JOHN W. SIBLEY, Treasurer. (Applause)	

President Dunwody: That is a very good report, and unless there is some objection we will accept same as read. We will now have the Secretary's report.

Report of Secretary Randall.

Theodore A. Randall, Indianapolis, Ind.: I am averse to going into figures and make a statistical report. I have noticed when some fellow gets up and deals in statistics nearly everybody goes to sleep. You all perhaps have heard there are three kinds of fabricators, the plain everyday fabricator, the one who stretches the truth in a flowing and extravagant way and the third the statistician. So I am not going into statistics, but I can say the past year has been one of the most strenuous from the secretary's view point we have ever had. We have distributed more literature, perhaps three times more than during any other year in the history of the Association. The suggestion was made this summer to abandon the N. B. M. A. and merge it into a division of another Association, but our work is more important now than at any other time. I think if you will glance through your program, you will find it is a little better than any other program we have ever had, and you will find if you will attend the sessions there will be some important developments in the industry made to you that some of you have not dreamed of, and this Association, and I am proud this is the case, is the first to introduce these innovations which spell economy of production and operation. That means a cheaper product which means an increased use of brick. The brick industry now faces a better prospect than it ever has. I know that from my official connection with this splendid body of men. I can say as I look over this fine audience the future of the N. B. M. A. is more promising than ever before. We are going to show you a new method of laying brick which the promoter says is going to cut the cost 50 per cent, so you can compete successfully with frame houses, because as we all know it is the cost of laying the brick in the wall that makes the expensive brick house. If any of you hang around in the lobbies and don't come into the sessions, you are going to miss some of these things.

Another innovation is a new process by which your common building brick can with very little added expense and very little technical skill, particularly the small manufacturer can make his brick more attractive, and be able to sell a much larger quantity than he has ever been able to do before. That to my mind is a fine message, and in this connection it is the local manufacturer who should be helped. The man who spends his money and pays wages should be able to control his own local market. There are other papers which will be of real importance, and I hope you will all give attention to the men who will read papers during the convention.

One of the things the industry needs, as one or two of the

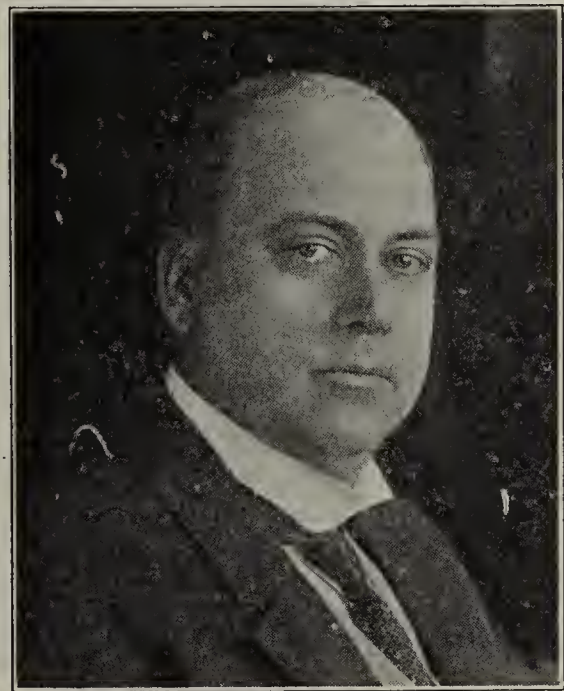
speakers have said is publicity, and we are getting it. You will be interested in a little effort in that line which I must credit to our vice-president Burton and his partner, William H. Lucktenberg of Zanesville, Ohio. They wired me a few days ago asking if I could go to Washington and present an invitation to be present at this convention to President Harding. I was awfully busy and it was with great reluctance I said "Yes," and this is a replica of the invitation extended to our president. The brick was purposely made a little unshapely and is inscribed:

Warren G. Harding, President of The United States of America:

It gives us great pleasure to invite you to attend our annual convention at Indianapolis, Indiana, on the 23rd, 24th, 25th, 26th, 27th and 28th of January, 1922.

The National Brick Manufacturers' Association.

We would have had one or two notables from Washington with us but for the Disarmament Conference which has put such a burden of labor on every one connected with the various departments they cannot leave the capital city, but we got a lot of good publicity out of it. I had an audience with President Harding, who is one of the most courteous men I have ever met in public life. When I presented the brick, he smiled his sweetest smile and said, "This is fine. I am very much interested," and walked over to the window, in



Treasurer John W. Sibley, Birmingham, Ala.

order to look at it in a better light, and when he came back, he said, "This reminds me of old days when I was an off-bearer on a brickyard." (Applause). The New York paper published a very excellent view of myself on the White House steps holding the brick, and below the picture said, "The gentleman above is Mr. W. H. Lucktenberg." I am going to sue Lucktenberg (Laughter) for damages. Notices in regard to this novel invitation have appeared in the papers all over the country. This is a line of publicity you cannot buy, and this perhaps was the purpose of Mr. Lucktenberg and Mr. Burton when they sent me to Washington. It is the most effective form of advertising.

I do not know that I want to say more at this time. I may have a good deal more to say a little later. This Association has many times been referred to in rather a critical way as a social organization. I am glad it has been a social organization so far as I am concerned, for I have gained the friendship of men of affairs through this organization because of the social side. You don't get very far in this life if you don't deal in the kindly human side of life, and this Association has brought men together year after year in the spirit of camaraderie, and the result is a better business understand-

ing. We have paid a lot of attention to the social side of this convention, and as a member of the local committee I would like to announce the smokerette for tonight. Originally it was intended to give the whole thing with the compliments of the local committee, but our Executive Committee said, "There is no reason why you should feed us. Let us pay for our own dinner and you can do the rest." So we have arranged for a supper in the Riley Room for which you can buy tickets, and after the supper we will have our smokerette. Tomorrow night comes the big social feature of our Association. We have some talent here of which we are proud. Our greatest Hoosier orator, ex-Senator Beveridge, will be our toastmaster, and then will follow some of the best talent in the country with some delightful music. So plan to take in the social as well as the business side of the convention and we feel sure you will find it a week well spent. (Applause).

President Dunwody: This brings us to the election of officers, and I will ask Secretary Randall to explain the procedure to you.

Election of Officers.

Secretary Randall: The first, of course, is the election of our president. Our elections are always by ballot except where the rules are suspended to make the election unanimous, and we don't usually have any very serious difficulty in that connection. If there is but one name, it is the custom of the Secretary to cast the ballot. The first, Mr. President, then is the election of president, and it has been our custom to promote our vice-presidents up the line, electing a new third vice-president each year.

President Dunwody: We are now ready for nominations for president of this association for the ensuing year.

John T. Hummert, Quincy, Ill.: Mr. President, I nominate our first vice-president Mr. Thomas E. Wilson to the office of president.

Jotham Post, East Williston, L. I.: I second the nomination.

President Dunwody: As there does not seem to be any other nominee, I will ask the assistant secretary to cast the unanimous ballot for Mr. Thomas E. Wilson for president of this association, and I declare him elected. Nominations are now in order for first vice-president.

W. F. DeMuth, New Philadelphia, Ohio: I rise to nominate Mr. R. C. Burton of Zanesville, Ohio for first vice-president.

Warren DeRosay, Warren, Pa.: I second the nomination.

President Dunwody: I will ask the assistant secretary to cast the ballot for Mr. Burton, and I declare Mr. Burton duly elected first vice-president of this association. We will now have nominations for second vice-president.

M. E. Gregory, Corning, N. Y.: It gives me a great deal of pleasure to nominate a co-worker of New York state. A man we all honor and love. I place in nomination Mr. Jotham Post of East Williston, N. Y., for second vice-president.

George H. Clippert, Detroit, Mich.: I want to second Mr. Post's nomination.

President Dunwody: The assistant secretary will cast the ballot for Mr. Post for second vice-president. You have elected Jotham Post for that office for the coming year. We will now have nominations for third vice-president.

J. W. Robb, Clinton, Ind.: For a real new man now, a fellow who is deserving, we have out in our section of the country a man who is interested right now in two states. We have the honor of having as a brickmaker in Indiana, and Illinois claims the honor of having his residence. He has been a successful brick manufacturer for a number of years. A good caliber of man and a good friend of every man in this association. I take pleasure in nominating Mr. Douglas

Stevens of Cayuga, Indiana, and Danville, Illinois. (Applause).

John T. Hummert, Quincy, Ill.: I second the nomination of Mr. Stevens.

Secretary Randall: I want to second the nomination of Mr. Stevens, and welcome another Hoosier on the Executive Committee.

President Dunwody: We will follow the same course with this, and ask the assistant secretary to cast the ballot for Mr. Douglas Stevens of Indiana for third vice-president, and I declare him elected. (Applause.) Now we come to the treasurer and secretary. We don't want to forget Sibley and Randall.

Secretary Randall: You can have all the fun you like. Last year John Sibley was in the hospital at the time of the convention and evidently the convention thought his chances were slim and they took a chance and elected him for life, and I trailed along after him so you have us elected for life. However, we do have another election. That is a member of the Committee on Technical Investigation, of which Albert



Secretary Theodore A. Randall on the Steps of the White House with the Brick for President Harding.

V. Bleininger is chairman. The committee is composed of Dr. Albert V. Bleininger, Marion W. Blair, Warren Griffiss, Edward Orton and W. D. Richardson. Mr. Richardson's term of office expired with this year. We have no more efficient and active man on this committee. I think we will do ourselves credit to re-elect him for the ensuing year.

John W. Sibley: I nominate Mr. Richardson to succeed himself as a member of this committee on Technical Investigation.

J. H. Chambers, Philadelphia, Pa.: I second Mr. Richardson's nomination.

President Dunwody: We will let this take the same course as the others, and the assistant secretary will cast the ballot for Mr. Richardson. What is next Mr. Secretary.

Secretary Randall: It may possibly be necessary to reform this committee. With our increased income, we can help this committee more than we have been able to do before and to enable this committee to do better work I move the president be authorized to enlarge this committee, and appoint for the ensuing year such men as may be desirable to make the

work of the committee more effective. I think the committee should be enlarged in order to enable them to proceed with their development work in an efficient way.

Wm. Hammerschmidt, Lombard, Ill.: I second the motion. Carried.

Secretary Randall: We are now ready for installation of officers, Mr. President.

Installation of Officers.

President Dunwody: Gentlemen, I have the pleasure of introducing your president, Thomas E. Wilson, of Pittsburgh. Mr. Wilson, will you kindly take the chair.

President T. E. Wilson: I think Mr. Dunwody is in a great hurry to get rid of this job for some reason. I noticed a year ago, I don't know whether it was something he brought with him from Georgia or something he got in New York, he asked me to preside about half the time, so I think he is in too big a hurry to put this job on to me, and I only wish I did come second in line instead of first, but before I give the vice-president a chance, because if he gets started I won't have any further chance. Of course, I feel like every other man has felt when he has been elected president of the National Brick Manufacturers' Association. I deem it quite an honor and a

knowledge is expended for less returns than any other industry in the universe. So this is a wonderful industry, one of which we should all be very proud. Coming down on the train, like our worthy retiring president, I jotted down a few things I feared I might forget of the things I want to say to you.

The conditions surrounding the industry are not everything we would wish for by any means, but who is to blame. Surely, it is not the public, because we expect the public to buy as cheaply as possible, quality and service being considered. Hence, it behooves us to strive by all means to increase the quality of our product, and to render efficient service to more effectively compete with products produced by other industries. We must eliminate waste, we must increase production, and above all we must practice strict economy. Of course, it is much easier to urge another to practice economy than to practice it ourselves, but economy must be practiced in this country before we can hope to see a proper return to prosperity. Very few people, if any, have any proper conception of the real meaning of economy, and right now I want to call attention to what I think is a very bad example of economy. The last week in December the Paving Brick Manufacturers' Association held their meeting or convention in Pittsburgh,

GREETINGS FROM PRESIDENT HARDING.

The White House, Washington, D. C., 1241 P 26.

Theo. A. Randall, Secretary National Brick Manufacturers' Association, Indianapolis:

Please convey my sincere regrets that I cannot be present at the thirty-sixth annual banquet of your association to-night. I very greatly appreciate the unique and cordial invitation which you extended, and I wish sincerely it might have been possible for me to join you. Under the circumstances I can do no more than express my very cordial greetings and good wishes.

WARREN G. HARDING.

privilege to preside over this organization. I am going to promise you I am going to do the very best I can so you may not have too many regrets on my account when this convention is over and we look forward to the next. I have often heard it said the best chairman of a meeting, the best president of an organization, is the one who lets the other fellow do the talking, and I believe that statement is correct.

However, before giving away to the other officers who have been elected, I want to say I am very, very deeply interested in the present and future welfare of the various branches of the brick industry. This is an industry as old, if not the oldest, in the history of the world. This is an industry, the value of the production of which places it among the greatest industries of the United States. It is an industry whose tonnage, including every clay product, is second only to the great steel industry of our country. It is an industry that produces the most beneficial building material for less money than any other industry in the world. It is an industry that furnishes to the public the most beautiful, the most durable, and the most economical building material of any industry known to mankind. It is an industry in which more capital is invested, in which more time is consumed, and in which more

my home city. Earlier in the same month the Face Brick Association held a convention at White Sulphur Springs, W. Va., at a cost to their membership, or for each member who attended of one week's time and more than \$100.00 in money. This convention of the National Brick Manufacturers' Association here in Indianapolis, and the one next week at St. Louis will mean about two weeks time, and will separate the average brick man and machinery man from more money than I believe he can well afford. That is not all. You remember last year in New York we failed to get the return rate, or the rebate on our return trip, simply because our attendance was too small. I predict the same thing will happen here in Indianapolis and again in St. Louis. Besides holding so many conventions, I believe we are dissipating our influence, and we do not have the standing we should have among other industries of the country. Suppose the Common Brick Manufacturers, for instance, goes before the Interstate Commerce Commission to petition the railroads for redress on any account. What will be the result? It will not have the proper influence because their members are too few, and the tonnage represented by them will be too small. The same thing will happen, as has happened to the Paving Brick Association, and the same

thing can be said of the Face Brick Association, or any other branch of the clay industry in which we are all particularly interested. Now, what I think we need and should have is one large convention once a year, at which all of these numerous organizations could be represented. Most of the work could be done by committees and this work then brought up for discussion before this big convention, so the members of that particular organization could pass upon the recommendations of their various committees either by adopting them or rejecting them. Think in this way we would have a very large attendance and a very large membership and we would have the proper influence and the proper standing; and in this way we would set an example of economy which I believe every brick man and every machinery man would approve and appreciate. Before this convention is over I hope to see some concerted action toward that consummation, which some one has said is "devoutly to be wished."

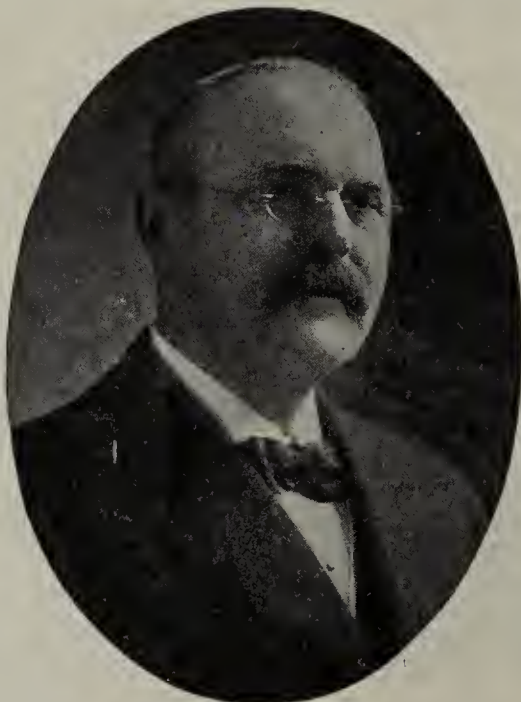
Also before this convention is over, I think it would be wise and opportune to give the members of this convention an opportunity to at least say when and where they would like to have the next convention. In closing I want to thank you for this honor you have conferred upon me and which I ap-

showed the Scotchman his harp and other Irish emblems, and the Scotchman went down into his pockets and brought out some of the dining car forks and spoons and so forth, showing his thrift. (Laughter).

His Honor the Mayor has given us a little idea of what we might expect here in Indianapolis, and I know what he said was the truth. After I got inside the hotel here a bright young fellow stepped up and wanted to know if I belonged to the association. I said I did, that I had just gotten in off the train. He said, "What is the number of your room. If you want anything we can fix you up for \$18.00 a quart and guarantee it, and guarantee you not to get into trouble while you are here." I know we are in the hands of friends. Our friend Mr. Stephenson of Alabama told us we wanted more publicity and told us why he believed in publicity. I believe in publicity always, and Mr. Lucktenberg has shown you a little sample of what publicity will do. That little experiment Mr. Lucktenberg has brought out has stimulated the brick business. It has brought out the idea that brick are indestructible. The President of the United States has demonstrated that in the kindness of his treatment of Secretary Randall. I believe in publicity. Sometime ago I read an account of a book agent



First Vice-President R. C. Burton,
Zanesville, Ohio.



Second Vice-President Jotham Post,
East Williston, L. I.



Third Vice-President Douglas Stevens,
Danville, Ill.

preciate, and I want to wish for each of you that the year 1922 may be filled with much happiness and great prosperity. I thank you. (Applause).

Now, it is my pleasure to introduce your first vice-president, R. C. Burton, of Zanesville, Ohio. Mr. Burton, you may now talk as long as you like, so far as I am concerned.

R. C. Burton, Zanesville, Ohio: Mr. President and gentlemen of the convention. The new president has just given me a cue. He rather intimates that the least amount of talking is the best thing. I know he is right, I have evidence of that. I happened to be over in his home country this summer, and there I learned for the first time that the real test of the true business man was one who could be something of a Scotchman to sell something to a Jew and make money. I know when we take Mr. Wilson's advice, and he has recommended strict economy, we are going to have that same Scotch economy which accounts for a whole lot. I was told a little story about a Scotchman and an Irishman going down to London for a little holiday. They knew it would not be wise to go back home without some souvenirs for the home folks, so Pat bought a harp and a few other Irish mementoes, and on the way home on the train they began to exchange ideas and show each other what they had bought. The Irishman

getting into the office of a big concern. He got to the president of the company who was astonished and said to him, "How did you get in here?" The book agent said, "This book tells all about how I got in here." O lot of brickmakers plod along from year to year; we have thought we should be dignified. I am reminded of an old concern which had been getting along with old machines, a good reputation behind them. A gentleman stepped into their office one day and said, "I want to talk advertising to your concern, and put you in the way of increasing your business. We will contract we will do that and we will take our pay out of the increase of your profits." Well, they were so dignified they could not see the force of his arguments. He said, "We guarantee to increase your business." But they said, "We are well known, we don't need any advertising." In a few years that concern went under, and in looking over their papers they came across this advertising firm's proposition where they had agreed for \$5,000 to increase their business and take their pay out of the profits, and one of them said, "Well there is one darn cuss that never got any of our money." (Laughter.) I know we have to have publicity. We are all making better brick than we ever did in our lives, better brick than were ever known in the world.

I was in an old town this summer, Pompeii, and I picked a brick out of the wall. It was not hard, but as near as I could tell it was easily 2500 years old, not a good quality, pretty sandy, made out of alluvial deposits, but that brick was still good, the mortar was dissolved and gone and the brick was lying loose in the wall as perfect as the day it was made, and any brick we make today was superior to it. When we talk about improving the quality, it is one thing we could almost drop in the business. We are in a position to say we are giving the world the best brick ever known.

I don't want to talk too much. There are some things I want to say later on, but there is one thing I want to say. This is not a new idea. We have had it ever since I began coming to these meetings. While we are in the position of making more brick, we have got to make more bricklayers. You talk about bricklayers at these conventions and our bricklayer friends get all fussed up about it, and say the reason they want high wages is because they only get five or six months work in the year. If we can show them we can give them twelve months work in the year and keep them going steady it would be better for the brickmaker and for the bricklayer. I believe it is a good time to get publicity and tell the young men that the bricklayer's trade is one of the best

best to pull this good old association along. I think it is a grand idea if we could have one big body and have all the associations meet in one city, so the industry would have more strength and more weight to it, and we could do more. I thank you. (Applause).

President Wilson: Mr. Randall will you bring Mr. Douglas Stevens to the chair?

Secretary Randall: With pleasure. He has the advantage over some of us. He has a good big crop of hair.

President Wilson: Ladies and gentlemen, your third vice-president, the new man on the list, Mr. Douglas Stevens of Indiana and Illinois. (Applause).

Douglas Stephens, Danville, Ill.: Mr. President and members of the association, ladies and gentlemen, I wish to thank you all for the honor you have conferred upon me in electing me to the office of third vice-president of this association. I have not been as regular in attendance at the various conventions of this association as I like to be, but I have never missed a session without real regret, and without feeling I was the distinct loser. The matter our president has spoken of in regard to economy in holding so many conventions, in so many widely different bands. Each association in the clay-working field has its own distinct line of work, and properly



George J. Potts.



James W. Hensley.



Robert Elliott, Jr.

Members of the Hoosier Entertainment Committee.

trades there is. The bricklayers disagree whenever we speak of increasing their numbers. They think we are trying to put something over on them. One of the officers of the bricklayers organization in New York told us last year there had been sixty-five deaths and only half that number had gone into their organization as new members. This is one thing we can do is get more bricklayers. (Applause).

President Wilson: Mr. Secretary, will you please escort Mr. Jotham Post, our second vice-president to the platform. Gentlemen, allow me to introduce Vice-President Post.

Jotham Post, East Williston, L. I.: I have no speech written out like these gentlemen. I thank you for your good will, or something of that sort, or good thoughts, of me. I do not know why you put me up here. I am not stuck on it. As I told you last year, I would rather be down there with you people. I noticed Mr. Gregory in nominating me got my name mixed up, and if you would just call me Joe, it would go just as well with me. My name is like the little fellow who was taken to court for a witness in some case. The judge asked "What is your name?" "My name is the same as my father's." "What is your father's name?" "The same as grandfather's." "What is your grandfather's name?" "The same as mine." (Laughter.) You can't blame me for my name, so just call me Joe. We will all pull together and I will do my

handled there is no reason why there should be any depletion of effort between the work done by the associations. There is a great deal for each of us to do, but I think all of the associations would be distinctly benefitted if there was closer co-operation between the different associations, and I would suggest as a means to that end that this convention appoint a Committee on Co-operation, to be one of the permanent standing committees, and that it be one of the duties of this committee to confer with the officers and directors of the other associations so they can all work together more effectively than has been true in the past. I am sure it will be a privilege and pleasure on my part to do everything I can to help carry on the work of this association. (Applause).

President Wilson: We will now hear from Treasurer Sibley.

John W. Sibley, Birmingham, Alabama: Mr. President and ladies and gentlemen, I appreciate this sentence for life. Appreciate it more now than I did a year ago when I did not know anything about it. I was wondering as I sat there whether you might not be in the same frame of mind as a darkey friend of mine who was about to take a partner for life. The minister said, "Mose, do you take this woman for better or for worse?" Mose said, "Parson, there you is, there she is, here I is. It appear to me if I ain't ready to

take a chance, then I been framed up wrong?" (Laughter).

President Wilson: Mr. Secretary what have you got to say?

Secretary Randall: I am very happy this afternoon. I am reminded of the little boy, a lovable little chap who had been playing around the room, and then ran out in the yard and presently began to yell like an Indian. His mother ran to him and asked what was the matter and he said, "Do you see that big lion out there. He is going to eat me up." "Why I am astonished at you, that is nothing but dog." He insisted it was a lion, and she finally told him to go up stairs to his room and say his prayers and ask God to forgive him for telling stories. He did as he was told and in a little while asked if he could come down. His mother said, "Did you say your prayers?" "Oh, yes." "Did you ask God to forgive you?" "Oh, yes, and He talked with me about it." He talked with you?" "Yes, He said, 'That's all right, I have been fooled by that damned dog lots of time.'" (Laughter.) We have all been fooled more or less and oftentimes fool ourselves just like the little boy, by imagining things, making lions out of dogs. I think right now we are touching on a good phase of organization work. I think Mr. Blair has a resolution touching on this thing, which he wants to read.

President Wilson: I think this is a good time, Mr. Blair.

Co-operation Between All Brick Organizations.

Mr. Blair: Mr. President and gentlemen of the convention, I hold in my hand a copy of two resolutions. The first is a resolution offered by the Executive Committee of this organization, which reads as follows:

Whereas, The best interests of the clay manufacturing industry can best be conserved by united effort on the part of all branches thereof on matter affecting the general welfare of all, and the greatest good can be obtained both for the industry itself as well as the general public by legitimate and concerted co-operation; and

Whereas, The National Brick Manufacturers' Association has an ancient and honorable history which has spelled steady progress in the art of clay manufacturing by reason of the faithful and sacrificial efforts of the pioneers who blazed the way and started the program of educational work in the development of clay products for wide and diversified uses, with an unbroken record of steady achievement; and

Whereas, There will continue to exist a great need for persistent functioning in this field of common interest to all branches of the industry for the solving of problems and increasing the efficiency in the manufacturing operations, the application of the product to various uses, and demonstrating the merit of the wares for the beneficence of mankind by promoting public welfare; and

Whereas, The major branches of clay industry that have come into existence from time to time as their special and commercial needs required, from the very nature of the case have been compelled to devote their greatest endeavors to promote the specific interests of said branches to the exclusion in a measure of matters of common importance to all, and the necessities of the case will compel them to so continue; and

Whereas, The N. B. M. A. already provides the best channel, one that is well organized and with the prestige of thirty-six years of endeavor which is recognized by the United States Government, and can more readily crystallize the consensus of opinion of the industry in a way calculated to exert the most helpful influence upon the civic authorities, our great transportation companies and general public; and

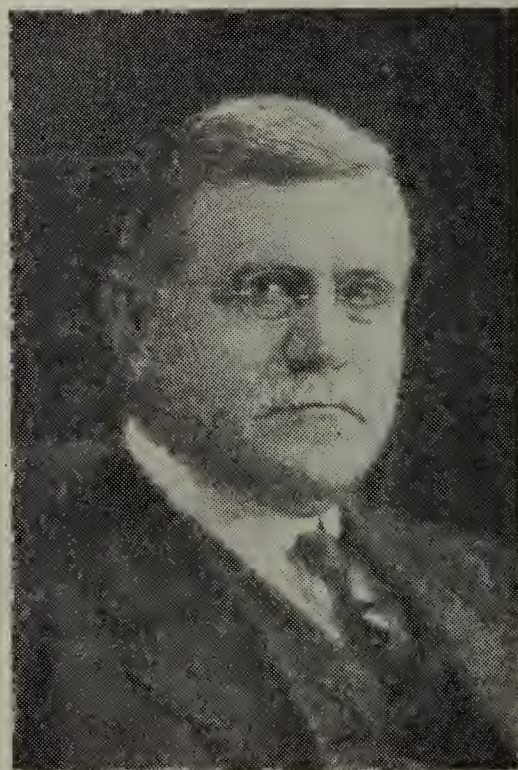
Whereas, In order to get the desired co-operation and unanimity of effort hereinbefore set forth, it is of vital importance there should be one annual season at which all the branches of the clay manufacturing industry should hold their conventions in the same place and during the same week; each branch to have its general specific meeting in a separate

hotel, if need be, but on one day during the latter part of the week, a consolidated convention to be held under the auspices of the National Brick Manufacturers' Association for the discussion of common problems, and that night participate in a general banquet for the promotion of that social fellowship so essential for the success of co-operative business endeavor; therefore, be it

Resolved, By the National Brick Manufacturers' Association in convention assembled in Indianapolis January 25-28, 1922, that the Executive Committee be directed and empowered to appoint a special committee of not less than three members, whose duty it shall be to make known the foregoing to the various clay manufacturers' associations of the country, and invite them to appoint special committees to attend a conference for discussing the matter, and working out a plan of procedure that will conduce to the best interest of the industry.

I desire, Mr. President, to move that the rules of the association be suspended and this resolution be adopted at this time.

Mr. Sibley: I second the motion.



Will P. Blair, Cleveland, Ohio, Vice-President National Paving Brick Manufacturers' Association.

Mr. Dunwody: I think this is a very important resolution, one which has been well considered and should have the hearty endorsement of this convention.

President Wilson: I am glad I made my speech before this resolution was introduced, or I would not have had any speech.

J. H. Chambers: The fact that this resolution has been brought forward evidences the fact that this thing is necessary for the good of the clayworkers' art. It is no new movement on the part of any one individual. These things do not come except as a result of a force behind us and behind our business, and the time has come in the history of these clayworkers' associations when this thing has got to be gone through. Otherwise, we have reached a point when we disintegrate and dissipate our efforts, instead of being a mighty force for the accomplishment of great things.

Ross C. Purdy, Columbus: Mr. President, as full time secretary of one of the clayworkers associations, I wish to second this motion. There is no sentiment in that motion. That is contrary to the efforts that have continually been made by the American Ceramic Society. The Society has met

with this Association a great many years, and will again and do it gladly. The American Ceramic Society did not choose a separate time of their meeting because they did not wish to meet with this association but it had other reasons. There are practical reasons for wanting to come together at times, and whenever there are practical reasons why we should at times come together and wherever it is possible the American Ceramic Society will meet at the same time and place as the National Brick Manufacturers' Association. In the American Ceramic Society there are divisions, one of which is the Heavy Clay Products Division. It is interested only in technical things that pertain to the manufacture of heavy clay products. There is absolutely no conflict between the work of that division and the work of the National Brick Manufacturers' Association and there is no reason why there should not be very close co-operation, and there will be if I can so influence things. (Applause).

Douglas Stevens: In connection with a closer co-operation between the various organizations in the clayworking field, I feel too much importance has been placed upon the mere physical effect of meeting at the same time and in the same city. That is worthy of consideration, but to my mind the major proposition is that these various organizations



J. Howard Chambers, Philadelphia, Pa.

should work together to promote the welfare of all of us. There are certain physical limitations as to hotel accommodations, certain necessary requirements which some of the associations have which may make it absolutely impossible and wholly undesirable to meet in any one city at the same time. These are matters which will have to be very carefully worked out, but the important thing is that the spirit of these associations toward each of the other associations shall be friendly. We are all considering today the same thing in somewhat different ways, and if that spirit of co-operation exists and is fostered, the details of the times and places of the yearly conventions will take care of themselves, and I believe that is the main spirit of the resolution, even though the matter of detail is left to a committee, at the discretion of the committee, and not that it should be done at this time. I am heartily in favor of this resolution.

Louis W. Penfield, Willoughby, Ohio: There is one point I might mention in this connection. I am heartily in favor of the co-operation of the different elements of this great industry. Our associates and our friends all like to attend the meetings of the various associations. We usually do attend. With regard to the condition which our third vice-president has just mentioned, at times as high as two-thirds of the association attendants attend all of these meetings. We

would much prefer to be able to concentrate our efforts, our time and attention in one week than in four or five or six weeks, as we now have to do, to say nothing of the economy which our president has referred to. I like to attend this convention, Mrs. Penfield particularly likes to do so, and she is by far the better association member, but if left to my choice I would be in Indianapolis this week, and the next week I would be in St. Louis, and the latter part of February I would attend the American Ceramic Society Convention, and I would be at two other conventions next week. Two days of this week is all that is allotted to me at this time, and I will miss the others, as much as I would like to attend all of them. I believe rightly managed a co-operation might be brought about by committees of these associations that meetings might be brought together, and many of us might have the pleasure and profit of attending these several conventions, not only a spirit of co-operation fostered and increased, but a real genuine benefit to those of us who attend the association conventions for the good of the craft would result. I sincerely hope it will be brought about.

Mr. Blair: I hardly think it is necessary for me to make any remarks in support of this resolution. I do want to say, however, that it is not the voice of one man or two men, or three men, but it is a matter which has been carefully weighed by the entire executive committee, and evidently was in the minds of a great many other men who have the interest of the clay industry of this country at heart, and likewise have a portion of it in their pockets. Heretofore we have never stood with a united front in this country for public opinion. We cannot with advantage meet public opinion unless we meet it as a whole. Other industries in this country present a united battle front, and when they demand a common consideration at the hands of this country as a whole it comes with the strength of a single voice and a united voice. That is the position I would like to see the clay industry placed in. When it has something to say which concerns all of us, it may be understood that it is the voice of the whole industry, and if necessary each one must become a part of the whole. As to the economic phases in this situation, many men, members of this association, and almost all here support in their membership these various associations or various interest into which the clay industries are divided. Some of you members of the Hollow Tile Association, some of you members of the National Paving Brick Manufacturers' Association, some of the Common Brick Manufacturers' Association, and of the American Face Brick Association and the American Ceramic Society, but except as we use the avenue of the National Brick Manufacturers' Association as a means by which we can sometimes get together once a year and set down and have a talk with everybody interested in the industry, how are we going to get that social strength and force that can be got in no other way; that can only be had by getting together and breaking bread together, and looking each other in the face.

There is another phase, and I am glad Mr. Penfield got on his feet because it reminded me of another feature. I do not think the brickmen of the country appreciate the advice and strength and influence of the men who make the brick machinery of this country and of them setting in this convention as one of us, because we have got to consult them daily. We are of advantage to them, but they are of advantage to us, and we should not send them hither and thither, but we ought to provide an avenue of contact and we will profit by it, because if we send Mr. Penfield here a week and some place else a week, and there a week, we all pay for it. I have looked at this question from almost every angle that my brain can invent, and I hope this resolution will receive the unanimous support of every man sit-

ting in this convention, and let us make this endeavor a power that may mean an accomplishment of great doings for the industry. (Applause.)

L. M. Johnson, Corruna, Mich.: After hearing all of these favorable comments, I would suggest we adopt the motto, "In union there is strength." That would cover the matter.

Secretary Randall: I heartily agree with all that has been said in this connection. It is one of the joys and pleasant memories of the days when this association met with the American Ceramic Society, and we ought to meet on the same kindly spirit all of the other organizations. There is no reason why all the associations should not meet at the same time. When the invitation came to us from the American Ceramic Society we had expected fully to meet with the Common Brick Manufacturers' Association at St. Louis, but afterwards conditions arose which made that impossible. Then in order to make it as convenient as possible for those who wanted to attend this association and the one at St. Louis next week, it was arranged to meet here, so the members could go on to St. Louis. It was the very best we could do, and I am heartily in favor of the unanimous adoption of this resolution now instead of referring it to the committee on resolutions.

The motion on the adoption of the resolution as read by Mr. Blair was then put by President Wilson and carried unanimously.

President Wilson: What is the next order of business, Mr. Secretary?

Secretary Randall: I have some telegrams and communications which I think would interest the members.

Greetings from C. B. M. A.

Detroit, Mich., Jan. 23, 1922.

W. E. Dunwody, Claypool Hotel, Indianapolis, Ind.:

The Common Brick Manufacturers' Association extends to the National Brick Manufacturers' Association congratulations on arriving at one more mile stone in its life history. May it live forever, flourish, prosper and be a power in the clay industrial world to the extent that more of our commodity shall be used, therein bringing prosperity, peace and harmony to its members. Sorry I am unable to extend this in person through conditions beyond my control.

C. H. BRYAN, President.

Good Wishes from Canadian Association.

Toronto, Ont., Jan. 24, 1922.

Theo. A. Randall:

Accept cordial greetings from Canadian Association with hopes that this may be your best convention. We invite you to Toronto February 7th to 9th. Our program calls for speech from Mr. Burton at banquet Wednesday evening and from Secretary Randall at noon luncheon on same day.

CANADIAN NATIONAL CLAY PRODUCTS ASS'N.

Greetings From Far Northwest.

Seattle, Wash., Jan. 24, 1922.

Theodore A. Randall:

Wish to extend on behalf of Washington and Oregon Clay Workers, better known as Pacific Northwest Section, best wishes for successful meeting and remind convention that the Portland, Oregon, Fair will be held in 1925 and annual meeting of that year must be held in Portland, Oregon.

SAMUEL GEIJSBEEK.

Telegram from Ex-President Richardson.

Columbus, Ohio, Jan. 25, 1922.

T. A. Randall:

Have just had to give up going to Indianapolis. Expect to be at next convention as an active brickmaker. My best

wishes for a successful meeting and for the continued usefulness of the National Brick Manufacturers' Association and for the prosperity of its loyal members.

Sincerely,

W. D. RICHARDSON.

Telegram from Ex-President C. P. Mayer.

Pittsburgh, Pa., Jan. 21, 1922.

T. A. Randall:

Leave for New York Monday on million dollar deal, therefore, will not be able to attend convention. Sorry.

C. P. MAYER.

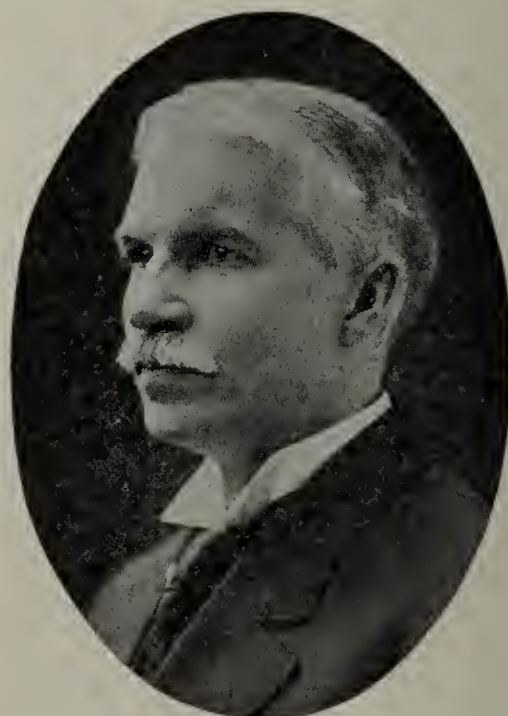
In Brick Business 63 Years.

Paola, Kansas, Jan. 19, 1922.

My Dear Randall:

Yours of the 16th received. It is very uncertain at this writing as to my being able to attend the convention at Indianapolis. If it is at all possible, I will be there, but I am doing the next best thing today, enclosing you check for annual fee, \$10.00. I hope the convention will be the very best you have ever had.

Now, friend Randall, it will be 63 years the 4th day of next



L. W. Penfield, Willoughby, Ohio.

month since I first commenced to off-bear brick in a wooden mould, without bottom, one brick at a time, in old England. In those days there was no machinery for tempering the clay for the manufacture of common brick; it had to be tempered by hand labor.

Say "how-do" to any of the old timers for me.

Yours very truly,

A. R. BATLEY.

Congratulation on Brick Presentation.

New York, Jan. 23, 1922.

My Dear Mr. Randall:

I am awfully sorry that it is going to be impossible for me to attend your convention but I sincerely hope that you will have one of the most successful meetings that you have ever had and I truly regret my inability to be with you.

I am sending you under separate cover a few copies of the New York "Daily News" of Saturday last in which you appear very prominently. I think you and Billy Lucktenberg are to be congratulated on this publicity stunt and I felt that you would possibly be interested in getting copies of this paper.

With very warm personal regards, I beg to remain,

Yours very truly,

R. L. WINSLOW.

Regrets from Our Chief Button-Holer.

Chicago, Ill., Jan. 18, 1922.

My Dear Theo:

Herewith please find check for my association dues. Have tried to fix things so I could be with you but will have to give up after all as things are not coming so I can get away. If you have made any reservations for me please cancel them and give my very best to all friends and very best wishes for the success of what I am sure will be the very best convention ever.

Very regretfully yours,

WM. D. GATES.

Sure of Good Meeting.

Columbus, Ohio, Jan. 21, 1922.

Dear Randall:

I cannot get to Indianapolis the coming week, or at least not until so late in the week that it would hardly be worth while. I had an engagement in Maryland scheduled for this week and after my ticket was bought and berth reserved I received a telegram asking me to change the date to Monday. Instead of leaving for Indianapolis Sunday night, I will be tucked away in a berth going east.

I note that you have me down for a discussion on valuation



M. E. Gregory, Corning, N. Y.

of clay lands. This is a subject in which I am interested and I have developed a method of making such valuations which I will be pleased to send you for publication in the Clay Worker.

Hope you will have a good meeting, but that is not necessary, because there is no chance otherwise in your home city. Indianapolis does not rank with Columbus, of course, but it is a pretty good old town.

With best wishes, I remain,

Yours truly,

ELLIS LOVEJOY.

A Humorous Side to Queer Twists in Publicity.

Newark, N. J., Jan. 23, 1922.

My Dear Randall:

Enclosed herewith please find page from the "Daily News" of New York City, Saturday, Jan. 21st.

I am surprised to note that you have not only changed the name of the association, but that you have also changed your own name.

I hope you will be as lucky as the first syllable of your new last name.

I regret that I cannot be with you at this convention, and with kind regards, I am,

Yours truly,

A. S. REID.

Mr. Dunwody: I move these communications be spread on the minutes, and proper replies be made by the secretary. Seconded by several and carried.

Mr. Blair: I said when I arose a while ago I had two resolutions. This one I have here is somewhat unique in the proceedings of a convention of this character. I have not, however, had the advantage of the assistance and consideration in having this prepared as in the preparation of the other one. This resolution I wrote since I came into the convention hall, assisted by two manufacturers of paving brick in this state.

PAVING BRICK RESOLUTION.

Whereas, The National Brick Manufacturers' Association in its Thirty-sixth annual convention assembled, in the capital city of Indiana, learns that the State of Indiana authorities are about to let contracts for the improvement of that part of the National Road lying within the State of Indiana; and

Whereas, A large sum of the Federal Road Funds is to be used as a part of the expenditure therefor; and

Whereas, The members of this association are taxpayers contributing to the Federal Funds from every State of the Union, therefore, the association by unanimous resolution expresses the hope that Indiana will follow the example of the State of Ohio, which has paved with brick more than 100 miles of the National Road lying within that state. A like mileage so paved in Indiana would be a due recognition to the industry, not only to the Indiana manufacturers, but as well to the industry throughout the Union, enabling this industry to contribute to a road improvement in accord with present day demands.

By resolution unanimously adopted this Twenty-fifth day of January, 1922.

M. E. Gregory: I move the adoption of this resolution.

W. W. Dickinson, Little Rock, Ark.: I second the motion. Carried.

President Wilson: We will now proceed with our program, "The Report of the Committee on Technical Investigation," by Prof. A. V. Bleininger, chairman.

Secretary Randall: Prof. Bleininger has not arrived as yet, and we will have to pass this report for the present. I have just received another telegram.

New York, January 24, 1922.

National Brick Manufacturers' Association,

Mr. Theodore A. Randall, Secretary,
Indianapolis, Ind.:

Congress ready to act on American valuation and protection. Tariff convention auspices National Association Manufacturers, January 30 and 31, Willard Hotel, Washington. Last opportunity to join with all manufacturers and producers in America and present united front to Congress. We can succeed only if we are united. Please telegraph how many will accompany you.

American Valuation Association.

The potters are very much interested in this American valuation, though it does not interest us so very much, but we have two capable members of this association in Washington, L. Perry West and John Miller. If you wish I can telegraph these gentlemen that Mr. Miller and Mr. West will represent us in Washington, they can speak intelligently for us.

J. H. Chambers: I hope Mr. Randall will be authorized to do that. While we ourselves are not importers of brick, yet this question of American valuation is of great importance to the business men of this country. It is a good thing to present a united sentiment to Congress, and if this association can aid in this work, we should do it. It is all along the line of united effort. No question we are all interested in

the questions that interest and effect the business of this country.

President Wilson: By common consent, we will ask Mr. Randall to reply to that telegram. The next on the program is a paper by Mr. Ross C. Purdy our secretary of the American Society on "Heavy Clay Products."

HEAVY CLAY PRODUCTS MANUFACTURING.

By Ross C. Purdy, Columbus.

Mr. President and Gentlemen of the Convention:

It is difficult to compose a fifteen minute address on this subject without boiling down to mere platitudes. Attempt was made and will be continued to get together actual data, but opportunity to gather and to analyze these has not been given to me. The task is large and time required too much to accomplish that which was planned for this convention.

Quality First Essential.

If paving or building brick are to be used more generally, they must be sold more largely. Now what are the essentials to a large and profitable sale of a commodity?

Commodities do not create their own market. Reputation for quality is essential to hold a market but quality alone will not create a demand for a commodity.

Cost price is an essential element but it is not the only essential to obtaining a big market.

Advertising is an essential but advertising not backed by quality will be a boomerang.

Personal salesmanship is an essential but this, unsupported by quality, will not bring repeat orders.

The essentials to demand for a commodity are:

(1) Quality—More than sufficient for the purpose for which the product is to serve.

(2) Price—In comparison with competing materials. Price cutting in competition with manufacturers of like product is as suicidal as a higher price than that of equally serviceable substitute material.

(3) Conforming to specifications as to character of product and adherence to deliver terms; in other words, deliver on schedule all that is agreed as to quality and quantity.

(4) Salesmanship and advertising; these are essential forerunners to a demand.

All this can be summed up in the most essential talent of business—Service. Service by the manufacturer and service by the product. The extent to which this service is not developed to the maximum marks the extent to which a given business will fail.

This paper will deal only with the production of the highest quality product at the lowest possible cost. We need not, in this discussion, build an ideal plant nor have an ideal clay. Indeed we need not scrap our old plant nor move to a new location.

It takes something more than capital to do what William J. Hanley, Jr., did at Bradford, Pa. It is said that he rebuilt and reequipped the entire plant, kilns, power and all. That took more than capital; more than courage; more than faith; it took a careful, judicial calculation of the increased earnings on the basis of present day prices, a calculation of greater safety to and more pleasant working conditions for the laborers, an estimate of the better delivery service given to customers and above all a clear conception of a more uniformly higher grade product at no greater cost to the consumer.

As sound as are the reasonings for rebuilding and re-equipping entirely, a plant, as in the instance of the Bradford Brick & Tile Co., it is not this to which your attention is now directed. It is to the making more out of the plants as they now are that your attention is here drawn.

More Economical Firing and Better Product from Present Kiln Equipment.

You—and this "you" means ninety-nine per cent of the brick and tile manufacturers—you can decrease your cost of manufacturing and produce better quality of ware with the equipment you now have. You will have to invest a little in control apparatus and, in some cases, will have to add a little equipment.

Without fear of a successful challenge, it can be said that in the burning alone there can be a ten to twenty-five per cent saving made without any alteration in kiln, fuel or labor. The Bureau of Mines, in collaboration with the three Brick and the Hollow Tile Associations, is demonstrating the truth of this assertion in the investigations they are now making.

The secret is in knowing the firing behavior of the clay and the proper regulation of the firings, draught, etc. In each of the three observations already made by them, one complete firing of the kiln in the routine manner by the plant firemen has given the

Bureau of Mines crew sufficient data and information to enable them to (1) shorten the time of burning, (2) save fuel and (3) produce a more uniform product. Still greater economies in this direction, no doubt, could have been made with repeated firings with the same kiln and clay.

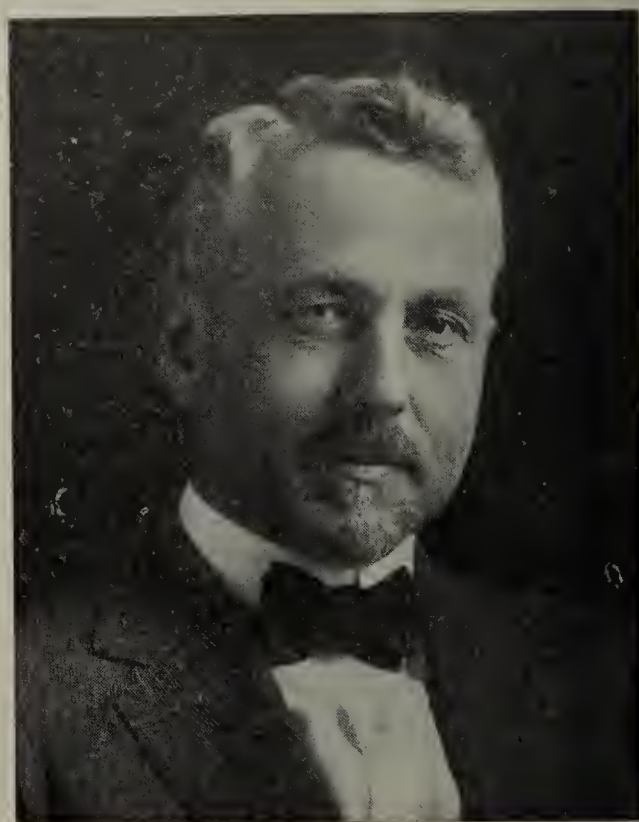
Now mark you, these results were not obtained by experienced kiln firemen. The Bureau of Mines crew is composed of technical men who did not have previous experience in burning kilns.

They are directed by Mr. R. T. Stull, Superintendent of the Ceramic Experiment Station of the U. S. Bureau of Mines, Ohio State University, who has had considerable experience but not in one of these instances has he been on the job except in a directional capacity. In the main, these inexperienced young men, trained in college only, and coached by Mr. Stull, have by their own judgment and resources effected this saving.

The secret of their success lies in intelligent use of instruments for observation of temperature, regulation and distribution plus common sense in firing.

Having ascertained the most economical method and schedule of firing the kiln, the regular firemen could maintain the same practice and obtain the same results. A recording pyrometer, plus rigid adherence to firing schedule and common sense regulation of the firings, the draught, etc., to meet changing conditions in fuel and weather, is all that is needed.

With the aid of recording pyrometers and systematic studying



Ross C. Purdy, Columbus, O., Secretary American Ceramic Society.

and filing of the charts, a more uniform product at less cost was obtained in a 94 kiln plant. This is a matter of record.

The best part of the story of this case is that before the kiln firing was under technical control, the company was dependent upon a kiln burner, the judgment of whom could not be challenged. Variations in quality of product could not successfully be credited to irregular kiln management. After the control system was inaugurated, the head kiln burner was still the efficient foreman but any efficient foreman could with success have been the head kiln burner.

No Need for Change in Personnel of Kiln Crew.

Every brick yard has a kiln crew of sufficient intelligence to maintain the most economical control of the kilns after they are once shown how. There is no need for employing experts for full time service in order to have the most economical burning. It is necessary, however, to set a schedule and insist upon it being followed.

Elimination of the erstwhile autocratic head kiln burner, without causing him to lose his position, requires that the superintendent and works manager share with the burner the responsibilities of seeing to it that the burning conditions are held as constant to schedule as possible. It requires a certain amount of vigilance and the use of common sense on the part of the entire organization.

So much for more economical firing with the kiln as it now is. Can still greater economies be made?

Kilns Must Be In Good Condition.

There are many kilns in use, or rather misuse, which would not require more than the usual upkeep costs to put them into condition for making economies in kiln operation and for producing more uniformly a higher quality of product. Kiln flues, bag walls, floor blocks, arches, etc., are too often neglected.

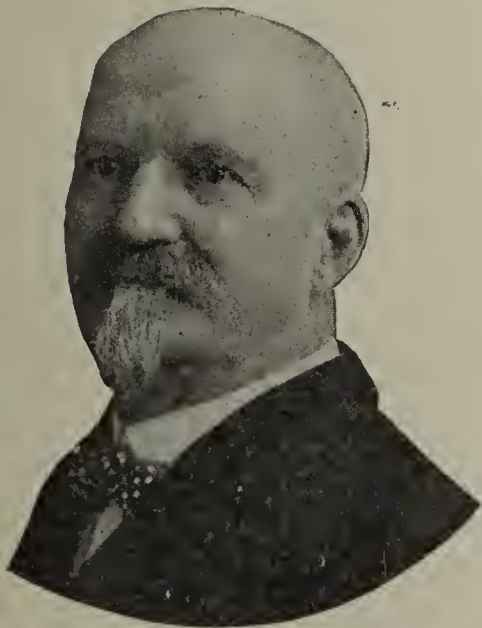
No Device Is Successful Everywhere.

There are devices for saving of fuel and for obtaining better control of the products of combustion in periodic kilns. Producer gas burners for periodical kilns are successful both from the standpoint of economy and from yard convenience. Success has also been had with the individual furnace gas producer. Neither of these can be successful under all or any conditions. Neither are suited to all coals, clays or kilns. All of us are familiar with the fact that there is no grate device suitable for all conditions and that in many instances it is better to have no grate at all. So it is with any device for use in periodic kiln furnaces.

The fact is that no one should expect a device to meet all of the many and varied conditions of clay burning in periodic kilns.

It is equally true that no device will prove satisfactory even when all material conditions are favorable unless intelligence is used in controlling each of the attending conditions. Too often is a device discarded that would have proven to be a very economical installation had the operator made the necessary adaptations.

There seems to be no need of expecting a new design of a



J. M. Blair, Cincinnati, O., Charter Member N. B. M. A.

periodic kiln that will prove superior to those now available. There will, of course, always be the question of most suitable dimensions but this is a question of plant flexibility and turnover rather than of device.

Continuous Kilns.

Related to this question of economical kiln operation is the one of labor and fuel saving of continuous kilns. There is no need here to dwell on the fact that continuous kilns are successful economizers of fuel and labor.

There is the question, however, of the chamber versus the car tunnel kiln.

Economies in fuel and labor per unit quantity of ware burned are equal in these two types of continuous kilns.

The records show a balance in favor of the chamber continuous kilns in:

- (1) Capacity per unit investment.
- (2) Dependability.
- (3) Upkeep.

Combination Kiln and Dryer.

If a new plant was being designed for making brick or tile on which kiln marks would not be objectionable, there is no combination of drying and burning device that equals in economies of all sorts the removable top chamber kiln in connection with a modified Scott conveyor and drying system. Removable crowns have proven successful in operation and low cost upkeep. The Scott system has proven successful in operation and upkeep.

The drying of the brick in the kiln, either with hot air from

cooling chamber or indirect heat from steam coils, is a demonstrated success. It is essential, however, that kiln marking, which would be inevitable in stiff mud bricks, shall not be damaging to the product. Paving brick, common brick, and rough texture face brick could be so dried without damage.

This combination would not be suitable for face or high grade fire brick.

For the smaller capacity plants, this removable crown, producer gas burned chamber kiln with the Scott system of conveying and drying has the largest economies of any yet devised. It will prove, I am sure, more economical than any combination yet devised for drying and burning brick while en route from the brick machine to the stock pile or car. It will prove to be for the smaller capacity plants all that the Chicago system has proven to be for the very large common brick plants.

Improved Machinery.

There is no need of reviewing the recent advances that have been made in equipment. The machine makers have been progressive. They have incorporated the very latest and best construction, bearing adjustments, oiling systems, etc. Due recognition has been given by them to the relation that is essential between auger size and pitch and the size of die outlet with different types of clays. They know about the cause of and the constructional methods of decreasing lamination. In fact, I find that the machine builders have kept abreast with the latest information. devices, etc., to produce maximum quality and quantity at lowest cost. It can no longer be said that there have been no improvements in the machinery and methods for brick making.

It would be idle to describe the economical methods that have been found successful in clay winning, transportation and fabricating into products. These should and will be reviewed but not by me until actual operating data have been secured.

Importance of Uniform Clay and Uniform Feed to the Machines.

There is only one more point that should at this time be made. With everything else set right for making the best possible quality with a given clay at the lowest possible cost, yet there will be failure if the clay is not uniform in character and not fed into the machinery at a uniform rate. This is not altogether a case of screening, although sufficient pulverizing and screening are essential. This is more a case of securing a uniform mixing of the clay and uniform feeding into the pug mill and brick machine. Ample storage bins and automatic feeders are important. Failure to pay due attention to these two things will decrease quality and increase costs.

Conclusions.

1. A substantial reduction in costs and increase in uniformity in quality can be obtained in operation of present kiln installations simply through technical control by the present operating force.

2. Devices for saving fuel and burning higher quality brick have proven successful in some places and under some conditions. None of them will prove successful under all conditions. Failure to realize economies is not always the fault of the device.

3. Car tunnel kilns will prove successful in many but not in all cases. The chamber kilns have proven advantages for many cases over any other type yet devised.

4. Economies can be had with removable crown continuous chamber kiln in conjunction with an improved Scott system.

5. The modern machinery is "up to the minute" in all details.

6. Uniform character of clay, uniformly fed to the crushers, screens, pug mill and brick machine is vital, in the majority of yards, to lower cost and higher quality of product. (Applause.)

President Wilson: I understand Mr. Richardson, who was to have led in the discussion of this paper, is not present.

Secretary Randall: It is a great pity Professor Bleininger is not here to make a partial report for the Committee on Technical Investigation. The questionnaire on burning which was sent out by the committee some time since has been coming back in larger numbers than we had anticipated or hoped for, and the Committee will have some valuable data for their work.

M. E. Gregory: I do not think we should let Mr. Purdy's paper go by without making some comment on it. It is full of meat, and we should all read that paper again next week and the week after when it is printed in the proceedings, and then read it again. He has given us a lot of suggestions, and if we follow them we will profit by them. It is not necessary for me to review it at this time, but I am very much impressed with this paper Prof. Purdy has given

us. I think it will go down in history, you might say, as one of the fine papers that have been presented before this association. I have the printed proceedings of this association ever since its inception, and I am very proud of this because they are full of good articles on all subjects pertaining to our business, and this is going to be one of the good ones. In five years from now we can turn back and read this paper with profit. There was one paper presented a few years ago before this association on kilns by Prof. Harrop that is the best thing on that subject ever written, and we have many other valuable papers in our reports.

L. W. Penfield: I want to say a word in commenting on the courage it took to write that paper. No one but the secretary of a national association would dare do it. We have got to learn to face facts if we are going to make progress.

J. R. Chambers: I would like to ask Professor Purdy if he has considered or knows of other mechanical means of conveying brick into open top kilns beside the Scott system. I know something about the Scott system, but there are other mechanical methods of putting brick into the kilns. One I have in mind is where the brick are lifted in units of 500 by means of a crane, and the bricks are set by hand from that crane. They are not set in bulk. You have all the mechanical advantages of setting brick in the kiln just as they are set by hand. It is applicable to open top kilns, and I think it would be helpful in considering that paper to recognize another method or mechanical means of getting brick into the kiln.

President Wilson: I see quite a number of kiln men and machinery men here and we would be glad to give an opportunity to any of them to discuss this paper at this time.

Christopher Steadman, Stony Brook, Mass.: Mr. Chambers probably refers to our plant at Richmond. I am very much interested in Professor Purdy's paper. It is a question of handling large units, and do away with hand labor. We have dispensed with the wheeling to the boat. We do this by setting and burning in large units.

Mr. Purdy: I want it plainly understood that this paper was not the final analysis of any study at all. It was merely the opening guns of the research work you are going to do, the American Ceramic Society's Heavy Clay Products Division is going to do. That is, the proposition he has described is not merely going to be mentioned by Mr. Steadman here, but is going to be investigated as an actual economy, as a matter of dollars and cents. We have already entered into correspondence with the machinery people and so many of the brick manufacturers as I happen to know as specially had devices. We invite correspondence, and if the National Brick Manufacturers' Association wishes to charge the Committee on Technical Investigation to assist in the research that is going to go on with these things, we will be very glad indeed. This paper is merely an outline of the work we are going to do.

Secretary Randall: We have with us this afternoon a charter member of this association, and one of our ex-presidents, who has not been with us for a number of years, J. M. Blair, of Cincinnati, whom I am sure we would like to hear from. (Applause.)

President Wilson: Mr. Blair, will you please come forward?

Greetings from a Charter Member.

J. M. Blair, Cincinnati, Ohio: Mr. Chairman and gentlemen of the National Brick Manufacturers' Association, I feel very proud today to be in this presence from the fact that thirty-six years ago twelve or thirteen brickmakers met in the city of Cincinnati at the solicitation of a number of brick

men and formed this organization. Little did we think at that time that it would grow into a vigorous business-like organization all over this country, that we have today. I am proud to have been an individual in that little coterie of brick manufacturers who met for the purpose of forming a national organization, and I thank you, Mr. Secretary, for calling for me and so make it possible for me to express myself today. This meeting certainly is a great revelation. As our secretary has said, we are entering upon a prosperous and vigorous time in the building industry. You have before you what is good, the bad is left behind. We have gone through what has been very severe. Unfortunately I am out of the business, but if I were younger I should like to be right in the business. There is another thing, now the secretary has called on me, I want to take this occasion to say a word about. I have not attended these conventions for several years, though I used to do so faithfully, I want to take this occasion to thank the members of this organization for having made me a life member a few years ago. I appreciate it more than you can imagine. I want, while I am up, to throw a little bouquet to the secretary. I was also in another organization, the National Builders' Association, which was very efficient for a number of years, and while it was not the fault of their secretary of that organization that it failed. That secretary writes me, "Find out how Randall keeps up his organization. We went to pieces some years ago, and we are anxious to know how the secretary of the National Brick Manufacturers' Association can keep his organization in such good form." Mr. Randall is present, or I would like to say more along this line, but I don't want to make him blush. You have a place in the country now of vast importance to the building interests, and it is up to you to keep that place in the future as you have in the past. Improve in every way the methods of making brick, make them as cheap as you can, make them as good as you can, use probity in your business and you will succeed. (Applause.)

Mr. Hensley, Indianapolis: We would like to have the men here mention to their wives that if they will meet me in the parlors immediately after this session, I will arrange the entertainment for them tomorrow. Whatever they want to do, we will take care of all of them.

President Wilson: That is a rash statement. Before we adjourn, I want to thank you for the splendid interest you have shown here. I think we have had a very good attendance for our first session. Now for our second session, let us be here promptly at 9:30. We may have to get up a little early, but it will be worth it. Gentlemen, you may consider the session adjourned.

The complete verbatim report of the other sessions and banquet will appear in the February 25th issue of the Clay-Worker.

A TRUCK PROPHECY.

In The Clay-Worker for January there was a story about good truck service which though put forth as a hint to better possibilities in trucking brick is proving to be a prophecy of things that are coming in the brick trade. It was plainly demonstrated at the N. B. M. A. convention that ways can be provided for loading and dumping trucks so as to speed up delivery, and Mr. Penfield had a story which graphically illustrates this, of a truck making ten loads in ten hours in Chicago covering an average distance of four and a half miles with each load. So while brick handling has not reached the record established in the coal trade of 16 and 18 loads a day, it is realizing that more efficient service can be secured in trucking by providing facilities for loading so as to keep the trucks in action.

AMONG THE LIVE WIRES AT INDIANAPOLIS CONVENTION.

THE CLAYWORKING MACHINERY firms did themselves proud convention week and aided materially in making the 36th meeting one of the most successful in the splendid history of the National Brick Manufacturers' Association.

Everything possible was done to give the machinery firms ample facilities for entertaining the delegates and spreading the knowledge of the importance and advantages of up-to-date machinery and labor saving devices.

The entire eighth floor of the Claypool Hotel was given over to them, and from the decorations, banners, placards and streamers it was evident that they enjoyed having exclusive possession. The fine bulletin board presented by the Hoosier Entertainment Committee at the previous convention held in Indianapolis four years ago, was in a conspicuous place in the hotel lobby and on same besides the convention program announcements, was the notice of the rendezvous of the machinery contingent.

As the delegates left the elevator at the eighth floor their gaze could not help but rest on a large seven by four foot floor directory, which gave the firm name and room number of each one represented. Surrounding this directory, the live wires nailed their signs and the red and black lettering on white cards confronted the clayworkers wherever they wandered.

The American Dressler Tunnel Kiln, Inc., Cleveland, O., had the finest display of all the exhibitors. A continuous automatic stereopticon machine gave the visitors much information relative to the Dressler kiln, while samples of ware burned in their various kilns scattered widely over the country covered several long tables neatly arranged. Bricks from the kilns of the Bradford Brick & Tile Company, Bradford, Pa.; the Donnelly Brick Company, New Britain, Conn.; hollow block from Columbus Brick & Tile Company, Columbus, O.; drain tile from the Franklin Brick & Tile Company, Columbus, O.; terra cotta from the Northwestern Terra Cotta Company, Chicago, Ill.; refractory block for glass tank from kilns of the Ohio Valley Clay Company, all demonstrated the practical value of this type of tunnel kiln. A movie picture taken on the Bradford plant especially for display at the N. B. M. A. convention was shown in the convention hall.

The E. M. Freese & Co., Galion, O., had some live wire delegates who did not show any signs of dull times in their business, in fact when they slipped us a bill fold as their souvenir, they stated that business in the brick and tile line had been picking up considerably and expressed the opinion that if the whole year keeps up in the spirit in which January had started it off, it would be a big year in the general machinery as well as the brick and tile business.

The International Clay Machinery Company, Dayton, O., occupied rooms 830-832, where they explained to the delegates the merits of their single gear self-containing one piece casting brick and tile machine, their single gear reversible steel shaft, cleaver knife pugmills, flexible bearing type drier cars and general line of clay working machinery, also gas producer, gas fired continuous kiln. Their representatives declared that the convention was one of the most successful from point of prospective business that they had experienced in many years. Handsome inkwells and letter openers were given out as souvenirs.

The Fate-Root-Heath Company, Plymouth, O., had a large display room 818 for their headquarters. There was always some jovial bunch in this room, morning, noon and night, where were displayed blue prints, pictures and catalogs of their complete line of locomotives and clay working machinery. They handed each delegate a fine bill folder of a brick red

color, in one side of which you can put your hundred dollar bills and in the other side your twenties, providing of course you have the aforesaid yellow and green backs. Business is good with the firm and the plant in full operation.

The Hadfield-Penfield Company, Bucyrus, O., was there with bells on. They had the largest delegation and spread good fellowship around throughout the week. In one of their suites of rooms they displayed one of their full sized electric welded steel dryer cars, a new idea, and first time to be shown. The bed of this car is one solid piece with no rivets, giving it twice the strength and four times the life of ordinary cars. This also has pin roller bearing which is self-adjusting and not binding on track. Their Brown clay tester density gauge and model of brick setter were also exhibited. A general line of catalogs of their clay working machinery, gasoline locomotives, Diessel engines, Strickland automatic soft mud brick machine were freely distributed as were also memoranda book and bill fold. This company of live wires had lots of good cheer about prospects for development in the clay working industry during the year.

H. T. Hall represented the Bristol Company, Waterbury, Conn., and displayed in room 808 a multiple pyrometer, single recorder pyrometer, strip recording watt meters and samples of protection wells.

Frank H. Robinson, Pittsburgh, spent a busy week explaining the merits of his drier cars, driers and kiln bands. He declared that prospects were good for a very satisfactory year's business.

In room 889 held forth the R. D. Nuttal Co., Pittsburgh, representative, J. E. Mullen, where the button holers could get complete information regarding the B. P. gearing made by that well-known company.

The Progress Pressed Brick & Machine Company, St. Louis, Mo., made a splendid showing in the assembly hall with a sample lot of dry press, rough texture brick, laid up in wall sections. This and their literature about their dry press attachment created considerable interest. J. Stocke, Jr., was the amiable representative.

Of course a National Convention would not seem a success without the presence of our old friend, L. E. Rodgers, of the L. E. Rodgers Engineering Company, Chicago, so we were well pleased to see him put in an appearance early. He has built many fine plants and his driers are highly recommended by a large host of users.

The Bonnot Company, Canton, O., was represented by A. A. Oldham, who took things easy and spent the week with his many old friends and new acquaintances explaining the advantages of their special hollowware machine which is well adapted to both brick and hollowware. A splendid serviceable pocket knife with a view of the Indianapolis Soldiers and Sailors' Monument was presented the delegates with the compliments of the Bonnot Company.

The Stevenson Company, Wellsville, O., representatives handed out their "greeting cards" and spent a happy week. Business is good with them, in fact, Mr. Hibben stated their plant is working full time and prospects are exceedingly bright. Room 825 was a happy meeting ground where delegates were presented with souvenir card case, folders and calendars with compliments of the Stevenson Company.

The Manufacturers Equipment Company, Dayton, O., was ably represented. Particular emphasis was being placed on their Single Roller Rock and Shale Crushers and Crushing Outfit, the Justice Radiated Heat and Clay Products Driers and Waste Heat Driers.

The Lancaster Iron Works, Lancaster, Pa., representatives were always on the job in rooms 824-826, where the inquiring delegates could see working models of the AutoBrick machine, also splendid illustrations of the Martin Pipe Rack

Drier, second unit for Jova Brick Works, Roseton, N. Y., catalogs of their general line of clay working machinery and a fire brick made on their machine so well that it was not necessary to repress. This was from the Kier Fire Brick Company, Salina, Pa.

Frank D. Chase of Chicago enjoyed every moment of the three days and was loath to leave. He stated he never enjoyed any convention as thoroughly as he did the N. B. M. A. convention and is never going to miss one if he can possibly help it. Mr. Chase is a ceramic engineer. He delivered an interesting address during the Thursday morning session. This will appear in the next issue of The Clay-Worker.

W. W. Dickinson, Jr., Little Rock, Ark., was always surrounded by a group of happy delegates who wanted to learn all about his brick setting machine and the splendid plant he owns and operates in Little Rock.

The Anderson Foundry & Machine Works, Anderson, Ind., was of course well represented. Wm. Durbin has many friends, satisfied customers using their Berg press, who wanted to get complete information regarding the Anderson oil engines, the write up of which in the January Clay-Worker created considerable comment.

A. A. McClamrock of the Wallace Manufacturing Company, Frankfort, Ind., did not seem to be worrying about business conditions, in fact he stated that they were running their foundry with a full force of men. They make the famous Wallace machine.

H. O. Steele of the J. C. Steele and Sons Company, Statesville, N. C., was on the job early. They make a complete line of clayworking machinery which has been sold extensively throughout the country.

J. O. Trautwein, the drier man, came down from Chicago to take in the convention. Otto or Joe (he goes under both titles), said he couldn't complain for things were coming his way and the drier game looked better each month, especially now that we have prohibition.

The Chisholm, Boyd & White Company, Chicago, Ill., was represented by a triumvirate of jovial individuals in the two Floods and Sidney Chisholm, who told the delegates about the Boyd press.

E. M. George, always a familiar figure around clayworking conventions, represented as usual the Main Belting Company of Philadelphia.

The Charles Englehard Company of New York City displayed their double suspended moving coil type of deflection used in all of their instruments, which they claim permits greater ruggedness and more sensitivity, making instruments of higher resistance than other types and eliminating necessity of line calibration.

The Galion Iron Works, Galion, O., presented through their representative amusing hot air protectors which could be placed over the ears. The instructions on same were "when a competitor tries to fill your ears with hot air use this for protection and do your own thinking." This company manufactures a line of road building machinery, but of especial interest to the clay craft is their coal unloader.

The C. & G. Potts & Co., Indianapolis, was quite in evidence convention week. George J. did his full part as chairman of the local entertainment committee, but had time to take delegates out to their fine plant and also keep open house in their room on the eighth floor of the Claypool Hotel.

The Chase Foundry & Manufacturing Company, Columbus, O., had two happy representatives in A. J. Dunn and his better half. They declared the convention the best ever from every standpoint including inquiries for the Chase cars and equipment.

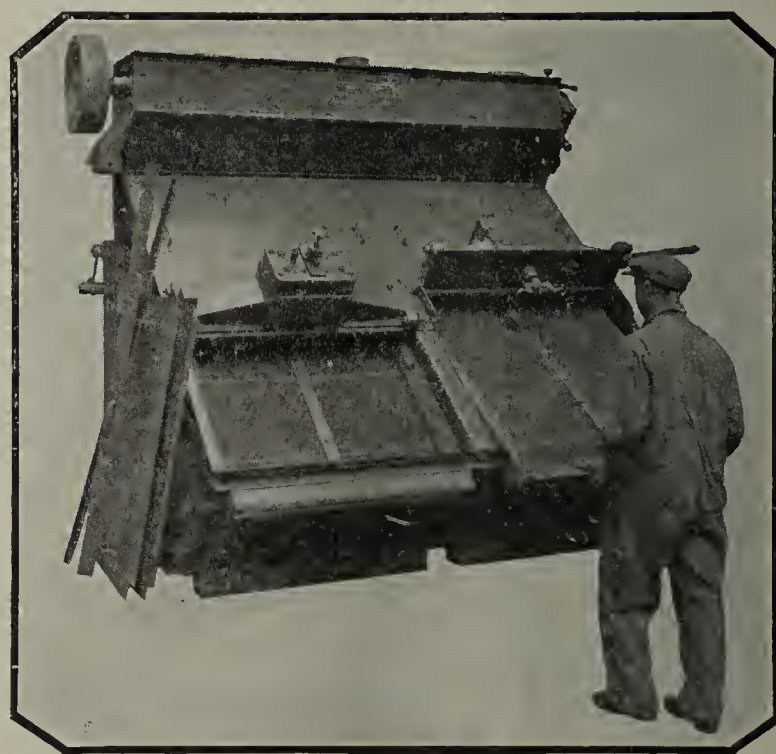
Another happy couple was J. H. Chambers and wife. They were in attendance at all social functions and Mr. Chambers took an active part in the convention proceedings as well as

to take time to explain to button holers the merits of the Chambers excellent line of clayworking machinery.

John J. Moroney, the "King of Free Ireland," wore the smile that didn't come off. These are happy and prosperous days for John and the Chicago Brick Machinery Company. There is quite a demand for their oil burning equipment, as well as clayworking machinery.

The Arbuckle Company, Rushville, Ind., had many inquiries concerning their shale planer and clayworking machinery. Their two representatives, J. W. and Fred Arbuckle, gave out information relative to new type shale planer, a small one that can be used in working surface or small face of clay.

The W. S. Tyler Company, of Cleveland, O., has an interesting display of catalogs, blue prints and samples of screen cloth and top caps which together with pictures of the Hummer electric vibrating screen solicited much interest from the visitors. The screen cloth and ton cap of various mesh for different requirements included samples of all kinds from



The Hum-mer Clay Screen.

200 mesh 1½ inch opening to 40,000 openings per square inch. Several attractive photographs of installations in clay plants were on display. Mr. F. P. Nickerson handed the delegates most acceptable watch fobs, the fob being of screen cloth.

The Standard Dry Kiln Company had plenty to do convention week entertaining old and new friends, conducting delegations through their plant, besides playing an important part on the entertainment and reception committees. The Robert Elliotts, senior and junior, Victor Jose and H. Wirsching were busy all the time.

The steam shovel representatives admitted that the shovel business is digging in as if it meant to do things this year for the people are realizing that the steam shovel is a labor saving device, as well as a clay and shale getter, and more people are taking up with it right along. Handy pocket metal tape measures were distributed by J. W. Hungate of the Marion Steam Shovel Company, Marion, Ohio.

Other firms represented were the Thew Steam Shovel Company, Lorain, O.; Dunlap Mfg. Company, Bloomington, Ill.; Link Belt Company, Indianapolis; Schaffer Engineering & Equipment Company, Pittsburgh, Pa.; Smokeless Oil Burner Company, Bucyrus, O.; Ash & Pfund, Des Moines, Iowa; Scandanavia Belting Company, Cleveland, O.; Bay City Dredge Company, Bay City, Mich.; Proctor & Schwartz, Philadelphia, Pa.; American Manganese Steel Company, Chicago, Ill.; Lakewood Engineering Company, Cleveland, O., and American Appraisal Company, Chicago, Ill.

HEARD IN THE CLAYPOOL LOBBY.

If there was anything that Mayor Shank did not promise to give the brick people it was because somebody forgot to mention it.

L. L. Stephenson, Lovick, Ala., who made the response to the address of welcome, may be a bit slow on the trigger but he hits the bulls eye with what he does say.

O. J. Current, Red Key, Ind., says the drain tile business is a bit slow now, and hollow building tile is suffering seriously from price depression without any reasonable excuse for it. Part of the trouble is high freight rates, and part of the answer he believes is in a more earnest and diligent effort to develop the home trade possibilities especially in the matter of farm improvements and out buildings.

Lambert Haigh may claim Bucyrus, Ohio, as his home, but he is such a good booster for Chicago that the Chicago people owe him favors.

When W. H. Lucktenberg carried out the idea of burning into clay an invitation to President Harding he started something that got a lot of splendid publicity for the brick business and provided the President with a token which he appreciated highly.

Every time Hammerschmidt heard the name of Louisville he said it reminded him of a namesake transfer concern down there the owner of which he had sought to establish relationship with in the past but they never could find the missing link.

R. C. Burton brings a Scotch flavor into the executive circles of the N. B. M. A. and this bespeaks both thrift and enterprise as anyone will readily concede when they see and hear him in action awhile.

O. W. Dunlap, of the Dunlap Manufacturing Co., which makes the perfect clay screen at Bloomington, Ill., has a brand new idea in the matter of clay roofing tile. His idea takes the form of making a flat two-ribbed clay roofing tile shingle in such a manner that it can be burned and handled pretty much as hollow building tile is burned and handled, and then broken apart at the job for roofing purposes. His idea includes a special die that will make this tile shingle block in multiples leaving them attached together by the two ribs near each edge which will hold them during the burning and handling and can be broken apart at the job where they are to be put on the roof. He also provides, as well as the die for this work, a special device for punching nail holes as the clay column is cut off into sections.

Jotham Post, of East Williston, Long Island, N. Y., says the way to avoid trouble and misunderstanding about his name is simply to call him "Joe."

Robert Twells, Key-James Brick Co., Alton Park, Tenn., which is really Chattanooga, says they keep going the year around. During January and February they accumulate some stock on the yard because building is not quite so active, but he figures this will come in useful in the spring because the indications are for a goodly volume of spring building.

Massa John Sibley not only came up from Birmingham smiling, and with a new flock of "Coon" stories, but he says that business prospects look pleasant down his way too.

John T. Hummert, that pioneer of the Gem City Brick Co., Quincy, Ill., official starter off of the N. B. M. A. convention, arrived on time, helped start off the first session and stayed on the job enjoying himself right through each successive session.

Jealousy has cropped out again between New York and Chicago, and a New York representative did some lambasting of Chicago brick while, Lambert Haigh, of the Hadfield-Penfield Steel Co., took the defensive in support of Chicago.

The argument waxed warm and moved as fast and furious as a Ford car, with the honors about even until the presentation of that new coloring system for common brick. The showing made by Chicago in this gave Haigh the advantage as champion of Chicago, and he is now crowing over the New York delegation.

Douglas F. Stevens, the N. B. M. A. vice-president from Danville, Ill. and Cuyahoga, Ind., brings that strain of young blood into the organization that many have been shouting for. Also a good head for practical work as well as the best head of hair in the official ranks.

Ross Purdy holds the honors when it comes to making positive and clear cut answers to ceramic problems.

There are plenty who will attest to the popularity of the Book of Smiles, and also to the Standard Dry Kiln bunch headed by Bob Elliott, who always comes up smiling and pleasant.

BUILT IN A DAY, BURNS IN FIVE MINUTES.

There was produced at the N. B. M. A. annual a newspaper clipping from Chicago, telling about Friendship Center, a community house which was built in a day last October by Chicago business men, having been burned down in five minutes. It was a one-story building at 91st street and Houston avenue, 50x75 feet, said to have cost \$12,000, and its fate should be a reminder that it is safer to build with fire resisting material.

An AUTO-BRICK RECORD.

In telling the story of how the Hudson River brick field is turning from the old hand yard idea to machines and driers to speed up production, representatives of the Arnold-Creager Co., at the N. B. M. A. convention related a record instance of production with one of their auto-brick machines at the Jova Brick Works, Roseton, N. Y., on January 14th. The record was 70,000 brick in six hours and twenty-five minutes. Naturally with a showing like this they are awakening interest in their equipment and they report that they are getting a lot of business out of the Hudson River territory and it looks to them like a busy year.

KENTUCKY SECURES LARGE REFRACTOR'Y PLANT.

The Kentucky Refractories Corporation of Russell, Ky., will break ground very shortly for the erection of their new plant to be built at that city. The factory will be devoted entirely to the manufacture of high heat duty brick as well as super-refractories and will be of fire-proof construction throughout, electrically driven and will be the last word in modern manufacturing methods. The first unit which will be completed ready for operation at an early date will have a daily capacity of 75,000 standard brick. This corporation has 3,000 acres of clay lands adjacent to their plant. The quality of this material ranks among the highest in the country and promises to open up a very valuable and interesting field of geological endeavor in that vicinity.

The final plans of this concern call for a refractory plant which will rank among the largest in the United States and the products to be manufactured can be viewed by the refractory trade with much interest as the personnel of this corporation have had many years' experience in manufacturing high grade and super-refractories.

The corporation is composed of 7,500 shares of preferred stock and 7,500 shares of common stock, par value \$100 per share. The officers are: C. K. Turley, president;; R. T. Hipp, vice-president and general manager, and A. J. Ivey, secretary and treasurer.

DELEGATES AND VISITORS ATTENDING THE ANNUAL CONVENTION OF THE CANADIAN NATIONAL CLAY PRODUCTS ASSOCIATION AT TORONTO, ONT., FEBRUARY 8th, 1922.



CANADIAN CLAYWORKERS MEET IN ANNUAL CONVENTION AND JOLLIFY OVER PROSPECTS OF A RETURN OF PROSPERITY.

THREE DAYS of mingled business chats, friendly intercourse and social pleasures, were enjoyed by the brick and tile manufacturers of Ontario, February 7th, 8th and 9th, when they gathered at Hotel Carls-Rite, Toronto. Most of the leading men in the Canadian clay industries were present.

The local craftsmen were both thoughtful and clever in arranging for the social functions, which included luncheon each noon, after which one or more of the visitors addressed the meeting on some business or professional topic. The annual banquet held Wednesday evening and auto trips to the clay plants in and about the city.

The convention sessions were well attended and close attention was given to the speakers who had been invited to address the delegates. Good fellowship characterized the proceedings and many valuable suggestions were offered for the benefit of the industry and those engaged in it.

As usual Secretary Keith had prepared an excellent program, touching almost every side or angle of the clay business. In the discussions following it was quite evident that renewed prosperity lies just ahead for those who are persistent and diligent. In his official report he called attention to one danger, that of prison labor. There has been some talk of the government using prison labor in the manufacture of brick and tile. This, Secretary Keith said, was legitimate so long as the product of such labor was used only for government buildings, but that when it was put in competition on the open market with free labor, that it was unfair and intolerable and should not be permitted. It was admitted that prison labor might be used to advantage in the improvement of roads and public highways. The sentiment was heartily approved by all present.

One of the most interesting papers presented was that by Prof. W. G. Worcester, of the University of Saskatchewan. He pictured in a pleasing way the great possibilities in that undeveloped country, where there is a vast supply of clays of all varieties, including fire clays, china clays and clays suitable for the manufacture of terra cotta, paving brick and building brick of all kinds. Also building tiles and drain tile.

There were a number of other instructive papers presented which will be reprinted in the columns of *The Clay-Worker* later on. Several representatives of the brick machinery, kiln and drier equipment firms of the States were present and told of the latest improvements which they have to offer to the trade. Among the latter were Mr. W. S. Kupfer, of the American Dressler Tunnel Kiln, Inc., who showed moving pictures of the Dressler tunnel kilns and explained the method of construction and operation of same. Mr. Lambert Haigh, of the American Clay Machinery Co., and Tom Hibbin, of the Stevenson Co., Wellsville, Ohio, were active in glad-hand work.

A cordial welcome was extended to Theo. A. Randall, Secretary of the N. B. M. A. and editor of *The Clay-Worker*, who was the principal speaker at the Wednesday luncheon and was also made one of the headliners at the banquet, where he "subbed" for Rufus C. Burton, Zanesville, Ohio, who was to have been the guest of honor, but was prevented from attending by illness. Secretary Randall told of the success of the recent N. B. M. A. meeting, stressing the improved method of laying brick, which aroused a very lively interest.

The local entertainment committee, under the direction of Mr. C. A. Miller, chairman; William Burgess, Thomas Kennedy, John F. McCannell and others, lost no opportunity of making the visiting craftsmen feel at home. Much of the pleasure of the occasion was due to their untiring efforts.

Ryland H. New, of Hamilton, served so ably as president that despite his vigorous protest he was unanimously re-elected, as was also Vice-President Andrew Dodds, of Mimico. The latter was commandeered as toastmaster. D. C. Merkley, who was slated for that position, having been unavoidably detained at home. It was Andrew's first experience, but he proved in every way equal to the occasion. The ladies present vied with their escorts in hearty appreciation of the witticisms and jokes as they were injected into the more serious addresses. There was a delightful musical program with frequent community singing.

A panoramic picture of the members was taken Wednesday noon immediately after lunch. Same is reproduced and it will be noted that one and all observed the injunction to look pleasant. Many of the older members present voiced the wish that the next N. B. M. A. convention might be held at a convenient point, and time, in which event they said the Canadians would attend in a body.

TO START PLANT IN NEW MEXICO.

S. C. Reck, Rapid City, N. D., writes that the plant of the Rex Shale Brick Co., which burned the latter part of December will not be rebuilt, and the site and location is now for sale. Mr. Reck will locate a stiff mud brick plant in Northern New Mexico the coming season.

ANNUAL MEETING OF AMERICAN SOCIETY TESTING MATERIALS.

The twenty-fifth annual meeting of the American Society for Testing Materials will be held at Atlantic City, N. J., June 26 to July 1. Headquarters will be established at Chalfonte-Haddon Hall Hotel.

BRICK AT FIVE CENTS EACH.

THE OLD COURIER-JOURNAL building at Louisville, Ky., which was the scene of fire Monday night, January 9th, is a historic landmark that furnishes an interesting bit of brick history. It was built on the corner of Fourth and Green streets, Louisville, by W. N. Halderman in 1876.

An interesting feature in the story of this building is in the statement that it was originally constructed of brick brought to Louisville from Baltimore at a cost of five cents each. It was then regarded as the first skyscraper in Kentucky and attracted much attention. And when put into commission as a newspaper plant it was heralded as the finest in America. It was here that Henry Watterson made the Courier-Journal editorially famous the world around, as it was the home of the Courier-Journal and Louisville Times for many years. In 1912 these papers were moved to the Third street corner of the block in the old postoffice building and the original building was turned into an office building, though it still carried the name of the Courier-Journal Building.

The fact that brick for this structure was shipped from Baltimore and cost five cents each, is a reminder that in the pioneer days before the country had developed widely its brickmaking industry some of the brick structures erected called for difficult problems in transportation of brick from distant points, some being brought from Holland and other old countries to America for pioneer building purposes. Incidentally, it is a reminder that there have been other instances of comparatively high brick costs besides those of the past few years.



DELEGATES AND VISITORS ATTENDING THE ANNUAL CONVENTION OF THE CANADIAN NATIONAL CLAY PRODUCTS ASSOCIATION AT TORONTO, ONT., FEBRUARY 8th, 1922.

MEETING OF KENTUCKY CLAYWORKERS.

THE KENTUCKY Clay Products Association held its annual meeting in Louisville, January 24th, 1922. The meeting was called to order by President F. C. Klutey at 10:30 a. m. in the parlor of the Louisville Old Inn.

The minutes of the previous meeting were read and then there was a roll call and inquiry as to plans and trade conditions. T. Bishop read the treasurer's report showing a small balance on hand and this together with the minutes of the meeting were approved.

The roll call developed the fact that practically all plants were shut down at the time and about a normal amount of stock on hand. Plants are to start up at various times from a few weeks hence to March and April and the outlook generally is for a better business this year than was had last year. This seems especially true of brick and building material generally but the members making drain tile report that the drain tile business is slow at this time especially in parts of the state where corn is the main crop. All farmers have suffered from depression but the corn growers more than any except the temporary depression in the burley tobacco district of the bluegrass.

A check up on current brick prices, wages and coal cost, indicates some reduction all around from a year ago but more in price perhaps than either labor or coal cost. Current prices named by different members range all the way from \$9.00 up to \$18.00 for common brick and common face.

On the whole the western end of the state showed somewhat lower prices than Louisville and the eastern end, due in the main to a closer connection with coal mines and better labor conditions.

Using ordinary labor as the basis wages are found to range at present from 25 cents up to 40 cents an hour with some reductions here and there but not much. The main hope for lower costs and better profits in the brick business hinges upon lower coal and lower freight rates and the opinion was expressed that there will be a re-adjustment of coal mining wages about the first of April which should bring some reduction in cost.

The secretary reported the death of Mr. Fred Klutey, Sr., of Henderson, Ky., on Monday, January 16, 1922, at the age of 79, and announced that in his passing not only does President F. C. Klutey lose a father, but the industry loses one of the pioneer brick men of Kentucky, as the firm of Kleymeyer-Klutey Brick and Tile Co., at Henderson was established as a partnership concern in 1867.

It was moved that the association extend its sympathies to President F. C. Klutey and other members of the family, and that this resolution be entered in the records of the proceedings of the association.

A discussion of the freight situation led to the adoption of a resolution in favor of steps to help bring about a more equitable freight basis for brick and other clay products.

At 12:30 those in attendance adjourned to the dining room where a special lunch had been spread and enjoyed a social time for an hour.

A final short session was held after lunch at which on motion the old officers were re-elected for the year together with the following directors:

Officers: F. C. Klutey, Kleymeyer-Klutey Brick & Tile Co., Henderson, president; A. H. Schneider, Nicholasville, vice-president; T. Bishop, Southern Brick & Tile Co., Louisville, treasurer; J. Crow Taylor, Louisville, secretary.

Directors, term expires 1923: J. H. Clark, Owensboro, Clark Mfg. Co.; Geo. H. Dalton, Hopkinsville, Dalton Bros.; H. C. Kleymeyer, Evansville, Standard Brick Mfg. Co.

Directors, term expires 1924: J. T. Howington, Louis-

ville, Coral Ridge Clay Products Co.; M. J. Bannon, Louisville, P. Bannon Pipe Co.; L. Ruby, Providence, Providence Brick Co.

Directors, term expires 1925: W. H. Hall, Maysville; H. C. Cramer, Lexington, Lexington Brick Co.; Frank P. Hill, Paducah, Hill & Karnes Brick Co.

Those in attendance were: L. L. Richardson, Barbourville Brick Co., Barbourville; F. C. Klutey, Kleymeyer-Klutey Brick Co., Henderson; A. H. Schneider & Son, Nicholasville; A. G. Shields, West Point Brick & Lumber Co., West Point, Ky.; H. C. Kleymeyer, Standard Brick Mfg. Co., Evansville, Ind.; J. T. Howington, Coral Ridge Clay Products Co., Louisville; T. Bishop, A. T. Bishop, A. Herpel, Southern Brick & Tile Co., Louisville; A. Hillenbrand, Progress Brick Co., Louisville.

BLUE GRASS PERSONALS.

L. L. Richardson of the Barbourville (Ky.) Brick Co., says they had a fairly good year last year but the business outlook this year depends upon coal activities. If there are better times in the coal industry there will be building and better times in the brick industry. He says they have on hand about 300,000 brick with which to supply the current demand.

A. G. Shields, of the West Point (Ky.) Brick Co., says they made about four million brick last year and have about a million on hand at the present time. He thinks the outlook for the new year is better than last year.

H. C. Kleymeyer, of the Standard Brick Manufacturing Co., Evansville, Ind., says that the brick prospects are fairly good in Evansville and in the surrounding territory. The big problem being that of getting bricklayers. He reports about two and a half million on hand.

J. T. Howington of the Coral Ridge Clay Products Co., Louisville, Ky., says they shut down Christmas but they expect to start up again within a few weeks. In addition to their hollow tile they made about seven million brick last year and have about a million in stock at the present time. Brick prices he feels have been reduced more than labor and coal cost and the one chance for profit from brick this year is to get a little cheaper coal and lower freight rates.

F. C. Klutey of the Kleymeyer-Klutey Brick and Tile Co., at Henderson, says that the building outlook in their territory is fairly good and they ought to do very well in the brick trade this spring and summer. The present business in hollow tile is slow owing to depression among the corn growers. They have about six hundred thousand brick on hand and will not start up until spring, perhaps March or April depending upon the weather or trade conditions.

A. H. Schneider, of Nicholasville, who equipped his brick yard with machinery last year, reports that he now has a good outfit and about three-hundred thousand brick on hand. He will not start up until spring opens and feels that he has enough stock on hand to supply the early demand. He has hopes that the successful marketing of tobacco will relieve the financial stringency and make for better business this year.

T. Bishop, of the Southern Brick & Tile Co., Louisville, is putting in his time these days out taking contracts and laying drain tile. That is what he keeps himself and part of his crew busy at during late winter and spring when there is not much doing at the plant. Speaking of brick, he says they made about five and a half-million during 1921 and have about a million and a half on hand at the present time.

A. Hillenbrand, of the Progress Brick Co., Louisville, says he has been shut down but they are now getting ready to start. They only have a small stock on hand, about fifty

thousand, and will have to get into action to supply the spring trade. He thinks the outlook for the year is for very busy times in Louisville.

The Falls Cities Hydraulic Brick Co., with headquarters at Jeffersonville, Ind., plans to put in a drying equipment to cost \$20,000 so as to be independent of weather conditions and speed up their brick production.

REVIEW OF C. B. M. A. CONVENTION.

THE THIRD ANNUAL meeting of the Common Brick Manufacturers' Association was held in St. Louis, Hotel Statler, Jan. 30th, 31st and Feb. 1st, 1922. The meeting was devoted for the most part to advertising and publicity work and optimistic addresses as to the prospects of better business conditions during the current year.

About ninety-eight firms were represented but the total, including machinery salesmen and large delegation from Chicago, brought the attendance to over two hundred. The



Charles H. Bryan, Detroit, President C. B. M. A.

Illinois Brick Co. chartered a special car and brought to St. Louis twenty-nine delegates consisting for the most part of plant superintendents and office men. The next largest delegation was that of the Cleveland Builders Supply Co., Cleveland, O., there being seven in all. Five delegates represented the General Clay Products Co., Belleville, Ill. There were four each from the Clippert Brick Co., Detroit, Mich., R. O. Clark & Son Brick Co., East Berlin, Conn., Peoria Brick & Tile Co., Peoria, Ill., and Richards Brick Co., Edwardsville, Ill. While the Alton Brick Co., Alton, Ill., and Shrum Bros., Dayton, Va., had three representatives each. The sessions were well attended and strict attention was paid to the deliberations.

The convention was called to order Monday afternoon, Jan. 30th, by President Chas. H. Bryan with an attendance of approximately one hundred and sixty.

Mayor H. W. Kiel of St. Louis, made a very interesting address of welcome which was responded to by Wm. N. Cary of Albany, N. Y., in fitting style.

President Bryan made his usual flowery address. He stated

that he is looking forward with high hopes as to future prosperity of the industry. He complained of the lack of cooperation among the members in regards to answering correspondence and urged that everyone consider it his bounden duty to pay more attention to this detail in the future. He also urged the members to pay their dues more promptly. He stated that he would rather have no after dinner speeches but preferred get-together dinners and recommended that no money be collected from local brick manufacturers or machinery firms for entertainment purposes. He welcomed the machinery firms and urged their attendance at their meetings. He compared the convention to an alarm clock and reminded the secretary that it was his duty to see it was well oiled and in running condition.

"What to Expect from 1922" was the subject of the address by Josiah Kirby, Cleveland, O. He reviewed the general business facts that had lead us up to the condition we are in today, spoke of the good effect on business of the Federal Reserve Bank Ruling, the ill effects from Foreign Trade restriction, explained the general trend of cycles of prosperity and cycles of depression and stated that every angle of the situation tends to prove that money will be easy and more freely circulated this year, in fact easier than any time in the last 25 years. He predicted that 1922 would show the greatest building in homes, apartments and public structures in the history of the U. S. building operations. Freight rates are up, the lowering process will be slow, wages will be lower but never reach the level of 1914, gold is plentiful but purchasing power of dollar will be less, were some of the points he made. His company, The Cleveland Discount Co., loaned twenty-two million in 1921 and will loan forty million in 1922, thirty-nine of which will go to brick construction and one to concrete. In conclusion he said, get ready for business for it is coming.

Prof. S. H. Ingberg, physicist U. S. Bureau of Standards, delivered an illustrated talk on Fire Tests of Brick Walls. This was similar to the address made before the N. B. M. A. convention the previous week, which will appear in the February 28th issue of The Clay-Worker.

The first session adjourned after a brief statement from Secretary Stoddard on Mystery No. 3., which had been heralded in an extensive campaign as a big thing for the industry. The proposition consisted of the suggestion that they undertake the funding of a company that would purchase second mortgage bonds and relieve the prospective home builder of the little difference that generally exists between the cash and note basis which has oftentimes made the frame house due to fractional lower cost seem the better buy.

One of the most interesting talks of the convention was delivered in the second day's session. This was by E. Elmo Martin, unattached, of Cleveland, O., the subject, "How to Handle the Day's Work." He classified the fundamentals in business under four heads, Money, Material, Machinery and Men. Men he considered the most important of the four. Selection, training, paying and management were the main items in this division of business fundamentals. Under Management, he detailed the problems of the executive as being technique, how to handle himself, how to handle his own work, how to multiply himself and how to multiply himself through others. The question being not to whom the men are responsible or for what they are responsible but the order and sequence of the responsibility.

There are four kinds of work for man in a pivotal capacity, regular, irregular, special and creative. He detailed each of these and then mentioned the rewards for service, namely money, appreciation and promotion. In concluding his address he stated that it is not what we start but what we

(Continued on page 176.)



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

The Human Side in Business Cannot Be Ignored.

Dear Friend Randall:

It was my happy privilege to spend two days at your Indianapolis meeting and I am glad that I was there. I drank in good fellowship, new personal acquaintances and new information, like a sponge drinks water. I am a bigger man in my profession than I was before I went. I especially want to compliment you for that wonderful banquet program, one of the best I have ever heard. Your untiring efforts are especially worthy of commendation. The human side in business must not and cannot be ignored.

O. M. BOOHER, Manager,
Kokomo Brick Co.

Congratulations on Success of Convention.

Dear Teddy:

Arrived home this a. m. Enjoyed the convention very much. Think we had a good program and the banquet was the best ever. Surely you are to be congratulated, for your hard work and close attention to same certainly produced results. Hoping to see you in the East soon, I remain,

Yours very truly,

M. E. GREGORY.

Corning, N. Y., Jan. 30, 1922.

Best Convention of Them All.

Dear Randall "Bunch:"

We landed in Chicago O. K., and met the rest of our party all ready for the rest of our trip to California. Mrs. Post is feeling fine this morning and thinks she is well now, but full of regret that her illness during her stay in Indianapolis compelled her to miss so much of the good time there, and we did have a good time. It was one of the best of all the conventions I have ever attended. We start on our way to California in the morning. Yours as always,

Chicago, Jan. 30.

JOE POST.

Enjoyed Convention Thoroughly.

Dear Mr. Randall:

I was unable to see you before I left and I want to write you and thank you for the many courtesies which you and your very delightful and hospitable family extended to me.

I am glad that the paper which I read proved of interest because it justified your confidence in asking me to prepare it. I should judge from the talks I had with Messrs. Burton, Merry and Irvin of Denver, and a good many others, that it really was appreciated and was considered of value, in which case I feel amply repaid.

I have attended a great many conventions, but I can say honestly that I never so thoroughly enjoyed myself at one. I make it a point to avoid banquets whenever possible, but, of course, I have been obliged to attend a good many in the last twenty years. I think the banquet Thursday night

was the first one I was really sorry to see end. The speakers were, without exception, extremely interesting and I could easily have sat another hour or two and listened to a continuation by the same sort of men. You can be congratulated on having such friends.

I am looking forward to the next annual convention, although I shall hope to have the pleasure of seeing you before that time. Please let me know when you are in Chicago. It will be a pleasure to see you.

Sincerely,

Chicago, Ill.

FRANK D. CHASE.

Many Loyal Friends in N. B. M. A.

Mr. T. A. Randall, Secretary,
National Brickmakers' Association,
Indianapolis, Ind.

Dear Theodore:

I feel bluer today than I have for some time. First: Only a few days and I shall have to give away my only daughter; it is true she will be located not so very far away and will be in a comfortable home with best surroundings, and this, in a measure, is soothing to me. Second: I am forced to forego the very great pleasure of mingling with my dear friends of the N. B. M. A., and attending your instructive session. Some of the dearest friends I have are members of our association and it is due to our Association that I can number them as they are, loyal friends. Please convey to them all my sincerest regrets and my wishes are that you will have a large attendance and a profitable meeting.

I inclose you \$20.00 to pay annual dues for myself and son, Fred W. Salmen.

Brick business in this section is practically at a standstill and prices are dropping continually. We hope to start one yard on about March next, if our present supply will be worked off sufficient.

Please give to Mrs. Randall, Mrs. Gould and Miss Wallace, my love. Yours very truly,

Slidell, La.

FRITZ SALMEN.

PRESSED BRICK COMPANY IMPROVES PLANT.

The Los Angeles Brick Company is preparing to install complete electrical equipment in their Los Angeles plant No. 1, according to the officials of the company. In the interests of greater economy and efficiency the manufacturing operations which have heretofore been carried on through power generated by steam will be supplanted by electrical energy in the near future.

The local plant began some time ago with the installation of a huge clay crusher and conveyer system that resulted in a very substantial cut down of man power. This modernizing process will not stop until the plant has been made one of the finest in the clay products manufacturing field in the country.

According to the company's management, two other objects are sought aside from the economic considerations involved in bringing the local plant up to its highest point of efficiency. One is to meet promptly the tremendous demand for hollow tile, pressed and enameled brick, roofing tile, and architectural terra cotta which has resulted from the big building movement throughout the Southwest. The other object is to meet on better terms the competition which has come from the outside by firms eager to get as large a portion as possible of Los Angeles building business.

That this will be one of the biggest years in point of output in the history of the industry is indicated by inquiry among the local companies engaged in the manufacture of clay products. This is based on the fact that contracts call for a

greatly increased use of hollow tile, brick, and terra cotta products.

OBITUARY.

Lee Smith Straight Succumbs After Long Illness.

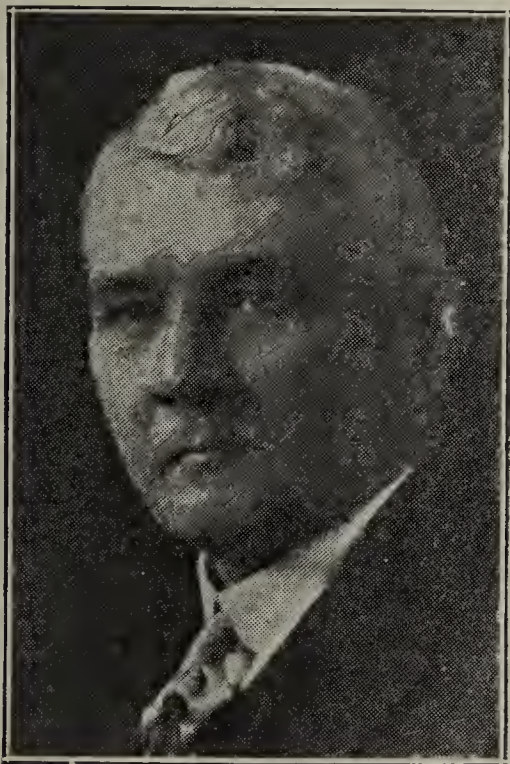
Lee Smith Straight, son of Rufus C. Straight and Francisna Abbey Straight, was born at Cropsey, Ill., December 22, 1860, and died at Adel, Iowa, January 22, 1922. Age 61 years and 1 month.

His boyhood life was spent on his father's farm at Fairbury, Ill., where he learned the first principles of clay-working at his father's tile factory, one of the first factories of the kind in the state of Illinois, erected in 1871. He was of the third generation of clayworkers of the family.

He secured a good high school education at Fairbury, Ill., and afterwards graduated from the Bryant and Stratton Business College, at Chicago, Ill., in 1882.

During the season of 1882 he leased his father's plant at Fairbury for one year, where he showed his ability to manage a small clayworking industry.

On December 28, 1882, he was married to Ida M. Tanner



The Late Lee Smith Straight.

at Pontiac, Ill., after which he immediately went to Manhattan, Ill. where a larger tile factory was under construction. He and his brother Willis owned this plant together until 1884 when he disposed of his interest and moved to El Paso, Ill. He owned a similar factory, a lumber yard and one of the first electric lighting plants in Central Illinois at El Paso until 1894 when he moved to Fonda, Iowa, to again go into the clayworking industry with his brother, Guy H. Straight.

The plant at Fonda was operated until 1907 under the firm name of Straight Bros., who also owned a plant at Spencer. Later more modern plants were at Auburn and Adel and managed with great satisfaction.

Meanwhile considerable land was acquired around Fonda, which was thoroughly drained and improved and was also a source of enjoyment to him.

He patented a number of devices, which showed his mechanical trend of mind and he was always thinking of ways to increase production and make the work easier for the employes of the various plants.

He had a slight stroke of paralysis, in the spring of 1917 after which he traveled a part of the time in hopes of re-

covery. His health gradually failed, however, from the day he was stricken until his death.

He was a member of the Methodist Church in his boyhood days until he died and was a strong supporter of the church wherever he was.

He was a member of the Modern Woodmen lodge for thirty-five years and also belonged to the I. O. O. F. and Macabees.

He was also intensely interested in educational activities. He served for years as a member of the Board of Education and was president of the board for a number of years until forced to resign by ill health. He gave all of his children the advantage of a college education.

He was a man of clean mind and habits, intensely earnest and a hard worker at all times. His judgment was depended upon by men wherever he went. He was deeply interested in the town affairs at both El Paso and Fonda where he was a member of the council for years and the mayor for several years at El Paso.

The harder the problem before him, the harder he worked and he never was known to give up anything he set out to do.

He is survived by his wife, Ida M. Tanner Straight, and six children, as follows: Halver R. Straight, Adel, Iowa; Fleda Straight Myers, Ithaca, N. Y.; Gladys Straight Woods, Fonda, Iowa; Ina Straight Holtzman, Adel, Iowa; Merton T. Straight, Adel, Iowa, and Alma Straight, Fonda, Iowa. Also survived by seven grandchildren.

He is also survived by three sisters, Mrs. Elizabeth Temple, Long Beach, Calif.; Mrs. Nellie B. Dack, Los Angeles, Cal.; Mrs. Stella G. Rechard, Los Angeles, Cal., and one brother, Guy H. Straight, Fonda, Iowa. Also one aunt, Mrs. Caroline Rogers, Cairo, Ill.

The good deeds he did during his lifetime will always remain fresh in the memory of his friends.

GOOD DEMAND FOR THE STEVENSON LINE

Thomas A. Hibben, the glad hand artist of the Stevenson Company, Wellsville, Ohio, had a busy time at Indianapolis, St. Louis and Toronto, doing the honors for the company with the delegates assembled at the various conventions. He reports that business is better than usual at the Stevenson factory. They have been running full time for several months, the demand for their dry and wet pans, crushers and sewer pipe press showing a disposition to get back to normalcy, as it were.

WISCONSIN CLAYWORKERS TO MEET IN MILWAUKEE.

The Executive Committee of the Wisconsin Clay Manufacturers' Association has decided to hold its 21st Annual Convention in Milwaukee on February 28th and March 1st, 1922. Headquarters to be at the Republican House.

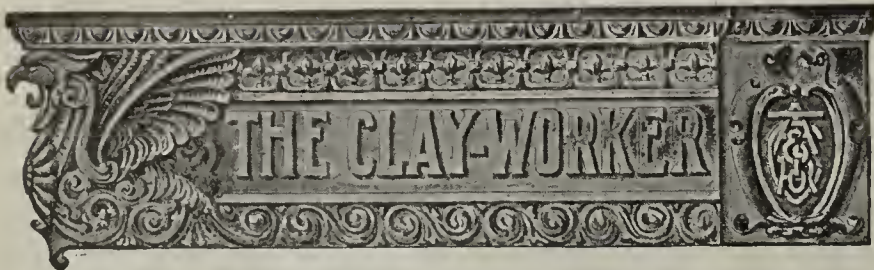
The Railway Rate Committee was in attendance at the hearing of the Railroad Rate Commission at Madison, December 22, 1921, endeavoring to get some adjustment on brick rates in Wisconsin. This Committee will, no doubt, have a favorable report to make at the Convention.

All of the Brick and Tile Manufacturers in the State are or should be vitally interested in railroad rates, building codes, both state and city, not detrimental to clay products, and numerous other subjects pertaining to your business, all of which can be accomplished to better advantage through an association.

But, in order, for this association to continue and function properly, members and clay products manufacturers must not merely pay their dues, but take an active part in the association and attend the conventions.

A program is being prepared, which will be of special interest to Wisconsin Clay Manufacturers.

The officers are John Ringle, Wausau, president; Samuel Gunther, Port Washington, vice-president; Oscar Zimbal, Sheboygan, secretary; Erwin Fricke, Manitowoc, treasurer.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

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THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

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Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77. February 15, 1922. No. 2.

CURRENT COMMENT.

There is already evidence that the new year is to bring some new things.

Many of us preach thrift a lot, but, honest now, how many of you paid any particular attention to thrift week?

The N. B. M. A. purpose has always been that two-fold one of social and educational, and it is still going good in both—thank you.

Those who didn't come to the big annual will realize when they read about it that they missed something worth while by not being there.

When all the common brick are made into face brick by the simple twist of a spraying device, what are we going to do for common brick? This question will probably bring a smile and a hand raised with an answer from the hollow building tile folks.

The weaknesses developed in cement drain tile now and then should be a warning to the clay tile people to make their product so good that no bad examples in it may be pointed out and made into a black eye for the clay tile industry.

It has been demonstrated by experience that there is such a thing as depletion among the cost items of clayworking, but reducing this to terms of thousand brick makes so much trouble with fractions that it is hardly worth while. It is an item that must be taken into consideration at inventory time, but cannot well be spread out on the daily cost sheet.

The machinery business is picking up a little as the clay-working industry shows signs of more activity and enlargement.

A lot of folks kid themselves with the idea they are on the outlook for opportunity when what they are really looking for is a good thing or a soft snap.

It is easy enough to set up a uniform size of brick, but how to get any kind of uniform shrinkage between the products of different sections is another question.

President Harding couldn't come to the N. B. M. A. annual, but he has a permanent reminder of it, and his telegram of greetings was most thoughtful and courteous.

The refractory end of the clayworking business is still in slow gear but the prospects are brightening some now and the present year should bring some revival in refractories.

One trouble with our railway people is they are finding too many excuses and not enough remedies for high freight rates. More hustling and less explaining on their part might help some.

Again it has been demonstrated that it is much easier to solve the problems of brickmaking than it is to solve those of bricklaying, but the bricklaying problem must be solved, too, before we can all be happy.

That big common brick field in the Hudson River territory is now turning from hand yards and natural drying to machinery and kiln drying and making a distinct step forward that should mean big things for the future of the industry that supplies a greater part of New York's brick needs.

WAGE SCALES.

Wage scales being published from various big cities where there are collective bargaining practices show some encouraging reductions, though on the whole they are still well above pre-war. Philadelphia, which is fairly typical, shows a wage scale agreement of 90 cents an hour for carpenters, compared with \$1.25 at the peak, and 55 cents in 1914. Bricklayers show \$1.00, as compared with 65 cents in 1914, and other callings are about in the usual proportions.

DRAIN TILE SIZES.

A check-up on the tendency in drain tile sizes indicates that while five-inch is the popular size of today, and occupies a place held by four-inch tile a few years back, there is still some four-inch being made. In some sections last year there was a little reversal and there was more call for four-inch than in the previous year, and there will likely be a come-back showing on the part of four-inch during the present year. There are some signs of this in Indiana. Illinois reports no three-inch tile being made and a tendency toward five-inch as a favorite but quite a heavy percentage of four-inch is being used right along.

SMALL TOWN BUSINESS.

If the signs read right the big doings this year in building operations will come from the aggregate of the small town business. The indications are that the building needs of the smaller cities and towns, those rating below 25,000 population,

will amount to more than double the work in the larger cities of the country, and that it is home buildings and the smaller apartments that will lead the list. Farm building is an uncertain quantity yet, and many projects in the big cities are only tentative, but in the smaller cities and towns all signs point toward big doings that will start early.

MAKE IT BETTER.

The slogan for the year among brick manufacturers should be to make the product better. There are signs, too, that this will be the slogan both among common brick manufacturers and among those making face brick. Some who already have a good reputation for face brick are striving to develop new color features and to further improve the element of quality and attractiveness. Many of those making common brick are so improving their product that it is getting into the face brick class, and so it goes. There is noticeable a decided inclination everywhere to improve the product as well as modernize equipment and methods. This speaks well for the future of the industry. It means that most everyone is taking a pride and interest in his business which will keep enthusiasm alive and the wheels of progress moving.

SHORT HAUL FREIGHTS.

Short haul freights have been burdensome to the clayworking industry and it is naturally seeking relief. The industry is not only making a plea to railroads for better freight terms on short hauls, but it has been actively pushing truck delivery and now it looks like the railroads may wake up and find a lot of this short haul freight lost to the motor truck.

The building of more good roads, the improvement of motor trucks, and the development of ideas and facilities for getting more out of them, makes it plain that the feature development this year in short haul deliveries will be in motor trucks replacing car shipments.

Meantime the railroads are realizing this. They have not only lost a lot of short haul brick trade, but they have lost it in many other commodities and now that they need business they are going after it. Already we are hearing of gasoline railway cars for short haul, and for some time we have had electrical development not only in trolley lines but from the steam railroads, too, and it is an open question which may win out in the race for future business. The thing we can cheer up about is that we have competitive interests centering their attention on the matter and there is likely to be considerable improvement in the next year or two in the matter of short haul freights.

A CONCRETE DISASTER.

The collapse of the concrete roof of a theatre in Washington and the sad disaster resulting therefrom not only shocked the whole country, but it will lead to more precautions in the future.

Strangely enough it often takes disaster and the shock attendant thereon to teach us lessons which we could easily learn by logic and reasoning and the following of which would save some of the disasters. This is not only true in construction and the matter of safety against both collapse and fire, but it is true in industry generally and even in politics.

It took the most disastrous war of the world to really teach us that fighting destroys even the victorious and that we should have peace and disarmament. Indeed, it may take even another great war or two to thoroughly teach us the

lesson. Yet humanity should have been able to see this for ages. And so it goes, always we are paying through disaster the terrible price to experience for lessons that we could learn from history and from logical reasoning.

It is well that we get lessons from disaster and learn to do better, but think how much in the way of suffering could be saved if we could learn the lessons first and prevent the disasters.

THE PRICE INDEX.

In the price index of materials of construction as compiled for the National Federation of Construction Industries, the average for common brick still shows a bit above the 200 mark, with the Chicago average down to 174.8. Hollow building tile, on the other hand, makes one of the lowest scores on the whole list, 128.3, as compared with a general average of all building materials of 169.5. On the face of this showing hollow building tile seems to be down to rock bottom, but common brick is still listed as rather high.

MOVIE MAGIC.

The calling of Mr. Hays to take a managerial position with the movie industry at what seems a fabulous salary, has not only set the punsters to work, but it has called forth more comment than almost any other one incident of late. And serious minded people are wondering just what it all means.

This thing of paying for managerial service of the movie industry a salary in excess of that paid the chief executive of the country is something to give us pause and make us wonder about the whyfore and the whence and whither. Also it gives us understanding of why and how it is many people forsake the ordinary paths of life and rush pell mell into the movie business in the hope of attaining fame and some of the fabulous salaries.

To the average man it suggests that either the movie people are money mad and reckless financially, too much given to thinking of money by scoopfuls, or they are either reckless or desperate. On the whole it does not impress one favorably with the movie business and its methods.

CLAY CHEMICAL KNOWLEDGE.

Every passing year not only brings to us some new knowledge of the chemistry of clayworking, but it serves to impress us of the need of more chemical knowledge by more people on the one hand and a concentrating on chemical research by expert chemists on the other hand.

To the average layman there is one trouble with chemistry in clayworking. It gets too deep, complex, and involved for him to keep up with and follow out clearly, therefore after being confused for a while he is likely to let it pass and to neglect the chemical end.

We will always have in the industry those who will concern themselves only with the mechanical and practical, we will have those who delve a little into the chemical, and those experts who go deeply into the chemical problems of the industry.

Perhaps the biggest division consists of those who are getting only limited insight into the chemistry of clayworking. The thought which suggests itself is that for the benefit of these we should have more of the essential chemistry fitting in with this class set forth in as simple a form as practical to make for better understanding and less confusion so that they may be encouraged to keep up the chemical doings and not

leave it all to the experts or let the experts get so far away from them that they are not able to understand what is doing and what constitutes the essential progress of the day in the chemistry of clayworking.

THE HOLLOW TILE MEETING.

THE FOURTH ANNUAL CONVENTION of the Hollow Building Tile Association was held at the LaSalle Hotel, Chicago, January 25-26. Officers and directors were elected, and some splendid talks were heard, as well as good reports from those in charge of fire investigation and research work, and during the luncheon hour, January 25, those in attendance had the pleasure of hearing Sir Harry Lauder.

Officers elected for the year were: Jas. T. Howington, president, Louisville, Ky.; Wm. Hutton, Jr., vice-president, Troy, N. Y.; E. R. Sturtevant, secretary-treasurer, Chicago.

In addition to the address of President H. M. Keasbey, other speakers on the program and their subjects were: "Following Through," J. C. Williams, of Critchfield & Co., Chicago; "Building Confidence in Business," by H. N. Tolles, president of the Sheldon School, Chicago.

"Fire Investigation Work at Bureau of Standards," by P. H. Bevier, of the National Fireproofing Co., New York.

"Work Accomplished by the Joint Research Council," by R. T. Stull, U. S. Bureau of Mines, Columbus, Ohio.

"Government Loans to Farmers," by John Thompson, of Pierce's Farm Weekly, Des Moines, Ia.

THE BOOK OF SMILES.

Not all men are "heavy lifters" in the daily routine of life's work. The current Book of Smiles remarks: "Some fellows always grab the stool when there is a piano to be moved." Another sage remark: "The younger generation at least has respect for old age when it is bottled." In the same vein of thought is a paragraph entitled "Judicial Cooperation." Two lawyers up in Oregon are joshing each other and being joshed quite a bit by their friends over an incident that occurred recently when one of them was asked to sit as a special judge in a "bootlegging" case. The one who was temporarily wearing the Judicial Ermine was in doubt as to what penalty to fix in the case. He called up his fellow Barrister and said, "Say, John, I've got a bootlegger here and didn't know what to give him. What would you say?" "Well," came back over the wire, "about \$10 a quart, and say, Charlie, can you get a couple for me?"

We find on the same page, the following:

"When Eva ate the apple
She wished at once for clothes;
Some girls of our acquaintance
Need apples just like those."

On the opposite page is a serious thought telling of the Standard Automatic Temperature Regulator, a very simple instrument easily installed. For further particulars, write The Standard Dry Kiln Company, Indianapolis.

To the Up-draft Kiln User

Do you get first-class brick throughout your arches? Do the brick in your arch eyes ring like other good brick? That is just what my system of eliminating arch waste does. See page 173.

F. W. GLECKLER, Oak Harbor, Ohio

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker, published monthly at Indianapolis, Ind., for October 1, 1921.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall, Editor.

Sworn to and subscribed before me this 22nd day of Sept., 1921.

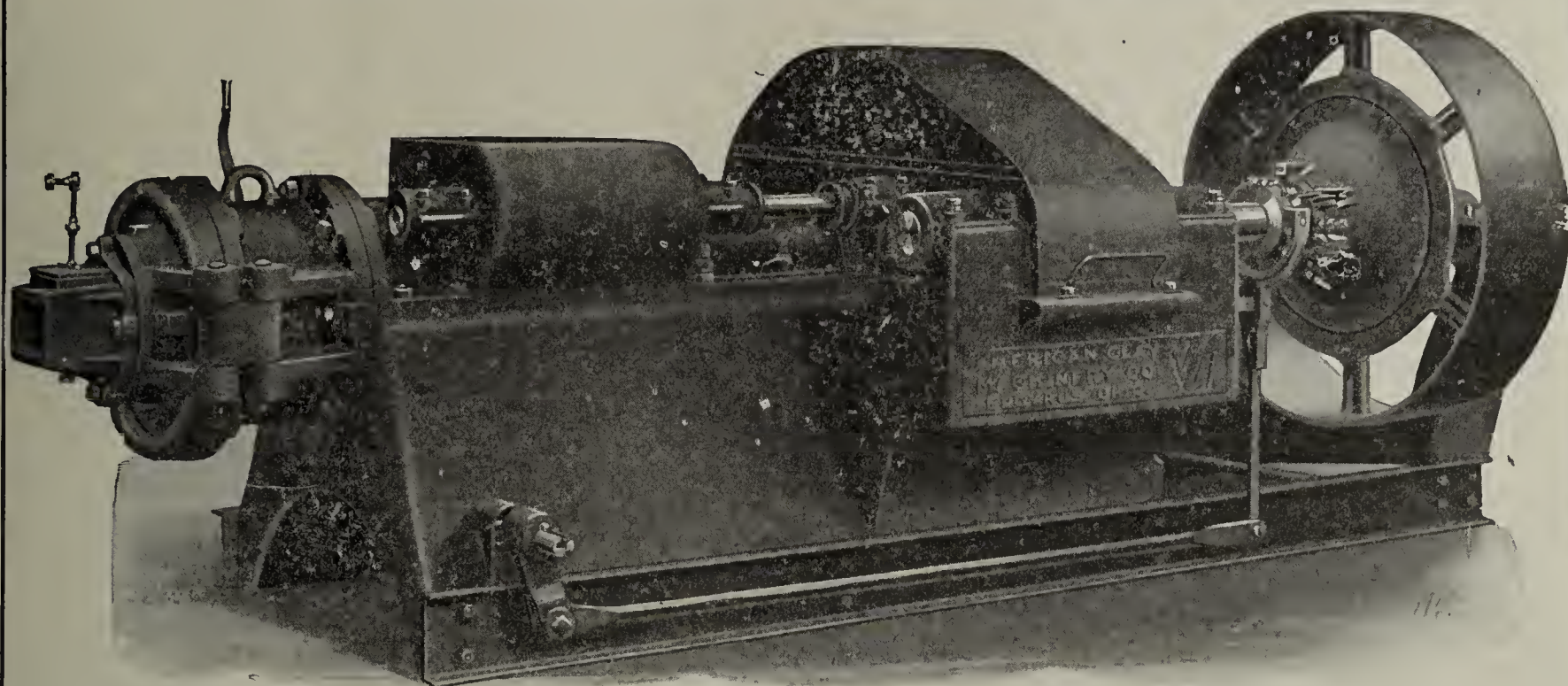
(Signed) CHRISTA A. LEWIS, Notary Public.

(Seal)

My commission expires June 30, 1925.

AMERICAN

No. 290 AUGER MACHINE



"By Their Deeds Ye Shall Know Them".
Ask These Users

WHAT THEY THINK ABOUT THE AMERICAN No. 290 AUGER MACHINE.

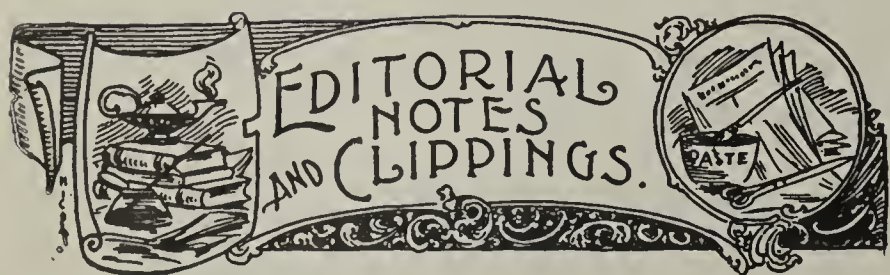
Here are a few users. Ask for other names.

All leading and successful Clay Plants have the No. 290 to help them succeed:

California Brick Company	Niles, Calif.
and	
Los Angeles Pressed Brick Co.	Los Angeles, Cal.
and	
Pennsylvania Fireproofing Co.	St. Marys, Pa.
and	
Evans & Howard Fire Brick Co.	St. Louis, Mo.
and	
Frances Vitric Brick Company	Muskogee, Okla.
and	
Bradford Brick & Tile Company	Bradford, Pa.
and	

There are many others. Names on request.

THE HADFIELD-PENFIELD STEEL COMPANY
formerly
The American Clay Machinery Co.,
Bucyrus, Ohio.



Fred Bender writes he contemplates starting a brickmaking plant at Cedartown, Ga.

Adam H. Walz has organized a company to manufacture press brick at Fort Mason, Texas.

The Carbon Fire Brick & Coal Company, of Carbon, Ind., has been incorporated with \$250,000.

J. E. Gallagher has purchased the brickmaking plant of John H. Walters, at Apollo, Pa., and will operate same the coming season.

D. W. Keller, Hartshorne, Okla., advises us he is in the market for brick making machinery and equipment. He should be addressed at Box 553, Hartshorne.

The Boulder Clay Products Company has been incorporated at Boulder, Colo., for the purpose of erecting a plant there for the manufacture of hollow building tile.

The Crodius Steam Pressed Brick Company, Pontiac, Mich., has tentative plans for the erection of a new factory on Sanderson street. It is proposed to call for bids in the spring. C. J. Crawford is president.

The Dawson Brick Co. is a new concern recently incorporated at Dawson Springs, Ky., with I. N. Day, president; A. E. Orton, vice-president; Will P. Scott, secretary-treasurer. They will manufacture common building brick.

W. H. Luckenberg, general manager of the Burton-Townsend Brick Company, Zanesville, O., advises us they have adopted the name "Old Homestead" for one of the varieties of brick which they make, and will use it as a trade-mark in connection with same.

The Wisconsin Clay Products Company has filed articles of incorporation at Kenosha, Wis., where the headquarters of the company will be located. Those interested are Joseph Orth, M. Laurensen and G. Schaeffer. The company will manufacture brick and tile.

The Pomona Terra Cotta Co., of Greensboro, N. C., will erect another plant to be known as Plant No. 4. It will be entirely of fire-proof construction, and together with machinery and kilns to cost in the neighborhood of \$100,000. W. C. Boren is secretary-treasurer of the company.

F. H. Eggers, one of the pioneer brick manufacturers of Cleveland, O., died at his home in Cleveland, January 27. Mr. Eggers served the National Brick Manufacturers' Association as president in 1895. He was a sturdy character and will be missed by a large circle of friends.

The aged mother of John C. Boss, Elkhart, Ind., died at his home in that city, Sunday, January 30. Mr. Boss had planned to attend the N. B. M. A. convention at Indianapolis, but felt he could not leave his mother who had just passed her ninety-third birthday, and spent the entire week at her side.

Bert Lowe, one of the owners and operators of the Gurdon (Ark.) Brick Company, has sold his interest to his brother, Marcus Lowe. This enterprise is the oldest in Gurdon, having been operated continually for more than 20 years. It manufactured 2,000,000 brick at its plant last year, 98 per cent being sold to out-of-town customers.

At a recent stockholders' meeting of the Sheboygan (Mich.) Brick & Tile Company, the following officers were elected: President, Dr. A. M. Gerow; vice-president, F. A. Haut; treasurer, Clyde Miliken; secretary, William Childs. The plant was just started last fall, but the prospects are bright for a good season.

The Bloomington Brick & Tile Company will erect a \$200,000 plant near Bloomington, Ind. Prof. U. S. Hanna, of the mathematics department of the Indiana State University; Thomas J. Sare, Louis W. Hughes and Charles H. Springer, all of Bloomington, are interested. They will manufacture brick and hollow building tile.

The Panhandle Brick & Tile Company has its plant at Amarillo, Texas, now in full operation, turning out 50,000 dry press brick and 25,000 hollow building block a day. The company has an inexhaustible supply of shale, and is so close to the natural gas field that they are able to use that fuel for burning their brick. A. S. Stinnett is president; R. B. Boyle, vice-president; John S. McTurk, secretary-treasurer, and C. C. Frampton, superintendent of the plant.

Articles of incorporation were filed with the county auditor at Coeur d'Alene recently by the Idaho Clays, Inc. The capital stock is \$500,000 and the company will manufacture sewer pipe, brick, pottery, terra cotta and other clay products. Laurence A. Spear and William M. Colby, both of Spokane, and William B. McFarland of Coeur d'Alene are the incorporators, and the object of the company is to establish a manufacturing plant in Coeur d'Alene.

Peter Olsen, one of the pioneer brick manufacturers of Kansas, died at his home in Salina, in January. With his brother, Andrew, Mr. Olsen established a brick yard in Salina fifty-one years ago, and had been in the brick business almost continuously ever since that time. Mr. Olsen was born in Sweden and came to Salina when a young man and lived there ever since. A widow, one son and one daughter survive.

Adonis Schnebelin, 57 years old, died at his residence at Plaquemine, La., after an illness of eight months. Mr. Schnebelin was interested in the manufacture of brick for the past thirty years and at the time of his death was president of the Plaquemine Brick Yard Company. He was also interested in the good roads of the parish, having had charge of them for many years. He is survived by his wife, Mrs. Delphine Schnebelin, four sons and five daughters.

Stockholders of the Wadsworth (Ohio) Brick and Tile Co., have elected the following directors for the coming year: Thomas Auble, C. A. Bolich, S. C. Durling, Oscar Suncox, C. M. Wertz, J. H. Rickard, R. A. Auble, George White and Ira Everhard. The directors organized by electing Thomas Auble, president; Ira Everhard, vice-president; S. C. Durling, secretary, and J. H. Rickard, treasurer.

The Dixie Coal, Lime & Clay Products Company, Dayton, Tenn., recently organized with a capital of \$750,000, is contemplating the construction of an electric power plant and electrically-operated pumping plant at Graysville, Tenn. It has plans in preparation for the establishment of a brick and tile manufacturing plant, with initial capacity of about 50,000 brick per day. A 50-ton hydrate lime manufacturing plant will also be built. O. E. Thomas is president and manager, and Fred A. Brian, vice-president.

The Farmers Tile Company has been organized to take over the business of the Whiteland (Ind.) Tile Company, which has been inactive for many months. The company is preparing to make all sizes of farm tile and will be in position to give the farmers of this county good service. The plant will be started by March 1st. The officers of the new company are J. L. Griffith, president; Charles Boone, vice-president; C. M. Durham, secretary-treasurer. Other directors are A. T. Brunnemer, Scott Curry and Walter Graham.

The Hay-Walker Brick Company of Pittsburgh, Pa., has leased the plant of the Bessemer Refractories Company, Bessemer, Pa., and is now making extensive improvements in same, preparatory to manufacturing the Dennison hollow building block. Archie Sproul, who has been superintendent of the Bessemer plant for the past five years, will continue with the new concern. The company has a fine deposit of shale and soft and flint fire clay and coal on the property. The Hay-Walker Brick Company is eastern agent for the Dennison block for which they are having a big demand.

At the annual meeting of the Salina (Kans.) Brick and Tile Company, R. J. Pafford was named secretary and manager, to take the place filled by F. C. Hadden, who died recently. Other officers are J. W. Neptune, president; R. S. Turner, vice-president, and F. W. Elkstrand, secretary and manager. These with the following constitute the board of directors: George H. Meyer, F. H. Rehm and Harry M. Hadden is a new member of the board, elected to the vacancy created by his father's death. Mr. Pafford, the new secretary and manager, has been with the company since 1909. The brick company is planning now to increase its equipment fifteen per cent. It has a continuous kiln. The plant has been burning coal but is being equipped now to burn oil. The company paid a 10 per cent dividend last year.

The Sumter Brick Company, of Sumter, S. C., recently booked a large order for their celebrated Dixie brick for the new Shelburne Hotel, Atlantic City, N. J. Mr. I. A. Rytenburg, the president and general manager of the company, who made a special trip to New York to help their New York agent, the Hay-Walker Brick Company, secure the order, reports that something like 200,000 brick will be required for the first wing of the hotel to be erected this year, while plans have not been entirely completed for the other wings of the hotel to be erected later, Sumter brick will of course be used.

The brick plant which has been operated for a quarter of a century in Alexandria, La., by Hon. C. N. Adams, better known to his myriad of friends as "Brick" Adams, has been sold by him to Mr. J. H. Johnson, and will be known as "The Adams Brick Company." The officers of the new concern are: J. H. Johnson, president; W. D. Hill, secretary and treasurer. These two gentlemen, together with J. F. Foisy, Robert Stack and Dr. J. A. Packer, form the board of directors. George N. Adams, a son of C. N. Adams, will continue as general manager of the plant.

Following reorganization, the Jackson Vitrified China Company, of Falls Creek, Pa., after being idle since early in last year, resumed operation and has drawn its first bisque kiln of vitrified hotel china. While the quality is said to be commendable, efforts will not be relaxed until the production has reached the point of perfection. Some changes have resulted in the personnel of the company and its plant roster. W. H. Jackson of Wheeling, W. Va., has retained the office of president and general manager. He is a former student at Alfred University, Alfred, N. Y., where he spent several years in the study of clays, glazes and color formulas. Frank Schwem, an active business man of Falls Creek, has succeeded Frank Patterson as secretary-treasurer and office manager.

NEW SELLING AGENT FOR ATLAS CARS AND EQUIPMENT.

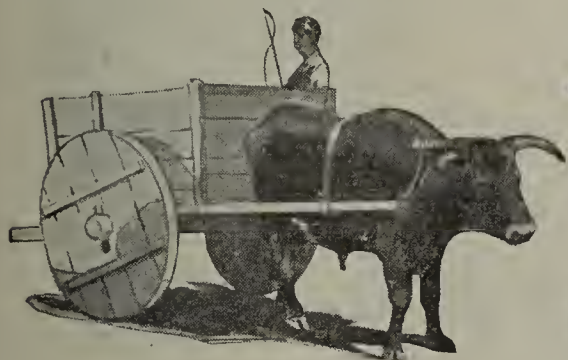
W. E. Hopton of The Hopton Co., White Memorial Bldg., Syracuse, N. Y., with branch office at Rochester, N. Y., has been named selling agent of New York State with exception of New York City and territory south of Albany, for The Atlas Car & Mfg. Co., Cleveland, Ohio., manufacturers of Storage Battery Locomotives and Trucks, Electric Locomotives and Cars, complete equipment for Industrial Railroads including Dryer Cars, Transfer Cars, Turntables, specially designed cars for rolling mills, mines, factories and plantations and By-Product Coke Plant Equipment.

If you want a new advertising slogan try this: "Make It a Brick Home." It's just another way of saying Build With Brick.

STOP—LOOK AND LISTEN

What is the use to invest thousands of dollars for equipping a good brickyard then drag along with the old scove kiln and damage half or all of your arch brick. A few hundred dollars to what you have will double your profits. See my ad on page 178.

F. W. GLECKLER, Oak Harbor, Ohio



Why cling to ox-cart methods?

FEW types of equipment have been passed down from the ox-cart age with as little improvement as revolving, bumping, shaking, mechanically vibrated, and piano wire screens.

These methods of screening are all wasteful, either in poor separation, limited capacity, excess power requirements, or upkeep cost.

Why cling to these ox-cart methods when modern HUM-MER *Electric* Screens with all their advantages are available? If you are using any other equipment than the HUM-MER, you can profit by changing to this "wonder" screen.

Read What These Companies Accomplished:

"Our capacity has been trebled over old type rotary screens."
The Silica Products Co.

"Great capacity with low cost made them practical for our work."
Bethlehem Steel Co.

"\$13,750 per year saving in dry scrap and rejections."
Hocking Valley Fire Clay Co.

"Screen as much as 80 tons per hour. We term it a 'wonder' screen."
Woodville Lime Prods. Co.

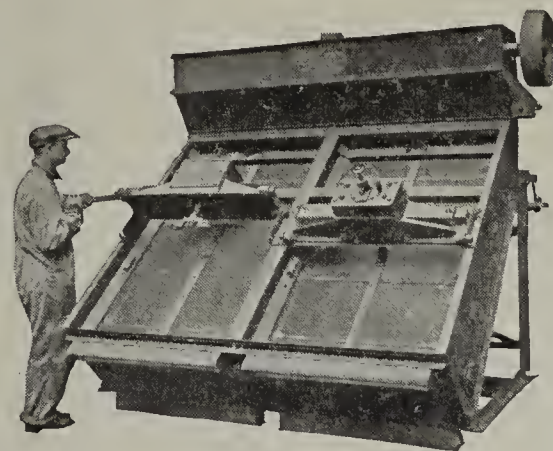
"In operation night and day since March, 1920."
The Summit Silica Co.

"Never has a machine given greater satisfaction."
Nassau Producing Co.

Let us show you the advantages of the HUM-MER over your present methods. Send for Catalogue 42-W

THE W. S. TYLER CO., Cleveland, O.

Manufacturers of Woven Wire Screens and Screening Equipment



Hum-mer Electric Screen
Screens any material from 2" dia. to 200 mesh

MISSOURI HAPPENINGS.

A fire which started in the fan room, adjoining the drying room of the Versailles Fire Brick and Clay Company (Versailles, Mo.) threatened to develop into serious proportions but was stopped through the efficient work of a large force of volunteer fire workers from among the citizens, who responded when the alarm of fire was given. Damage to a motor belonging to the company proved to be the largest part of the loss.

Walter Caste has brought suit for \$3,000 damages against the Moberly (Mo.) Paving Brick Company, for injuries he alleges he received while at work in the company's mine. He charges that as he was passing out of the mine he was struck by a mass of rock, shale and debris, which fell from the roof in the room in which he had been working; that he was crushed to the ground and suffered permanent injuries to his neck and ankle.

Robert Staten, an employe of the Wellsville (Mo.) Fire Brick Company, was injured while at work at the plant, loading a wagon. A team hitched to a wagon suddenly started and the wheels passed over his foot. An examination by a physician caused Staten to be laid up for about a week.

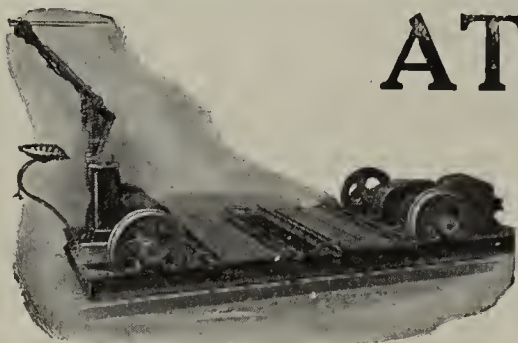
James Williams, 18 years old, was killed recently at the plant of the Harrisonville (Mo.) Brick and Tile Company. At the time of the accident the young man was working on the platform where the pugmill is located, directly above

the brick molding machine. The last machine is low and the auger is revolved on a shaft the end of which extends out a short distance, on which are located the power gears. The morning was cold and the young man was wearing an overcoat. No one witnessed the beginning of the accident but in some manner a set screw, holding an iron collar on the shaft, caught the corner of young Williams' overcoat. In an instance the young man was dragged down and revolved with the shaft, hitting the platform with great force at each revolution. Before the machinery could be stopped his overcoat had been torn off and the body thrown near the shaft. His right leg was broken in two places below the knee, both bones of the right arm were broken above the elbow, there were scalp wounds with possible fracture of the skull and internal injuries. The accident occurred at 9:30 in the morning and the young man died that night.

The Versailles Clay Plant, after being closed for several months, has again been put in operation. At present about forty men are employed and this number will be increased until the normal force of about twice that number of men has been put to work.

On and after February 1st C. W. Berry, formerly with Laclede Christy Clay Products Company, will be connected with Mitchell Clay Mfg. Company and Grand View Fire Clay Company as sales manager and ceramic engineer.

MISSOURI.



No. 913
Double Truck Electric Transfer Car.

ATLAS COST-REDUCING EQUIPMENT

Electric Transfer Cars
Rocker Dump and Gable Bottom Cars
Storage Battery Locomotives

Electric Trucks and Tractors

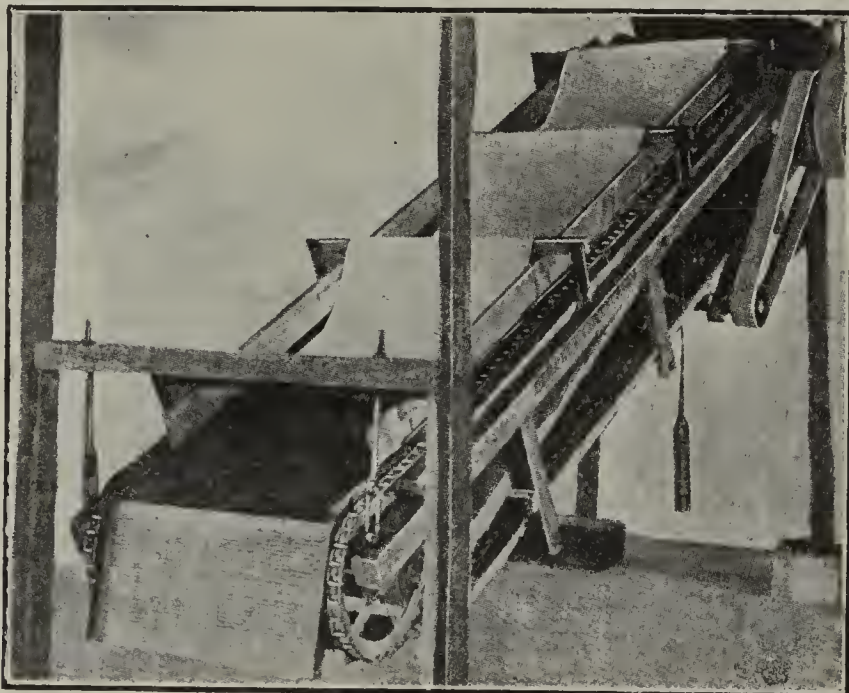
Tunnel Kiln Cars

Let us solve your haulage problems.



No. 217-EH
Large Capacity
Electric Side Dump Car.

The Atlas Car and Manufacturing Company
Engineers Cleveland, Ohio Manufacturers



PREFECT CLAY SCREEN

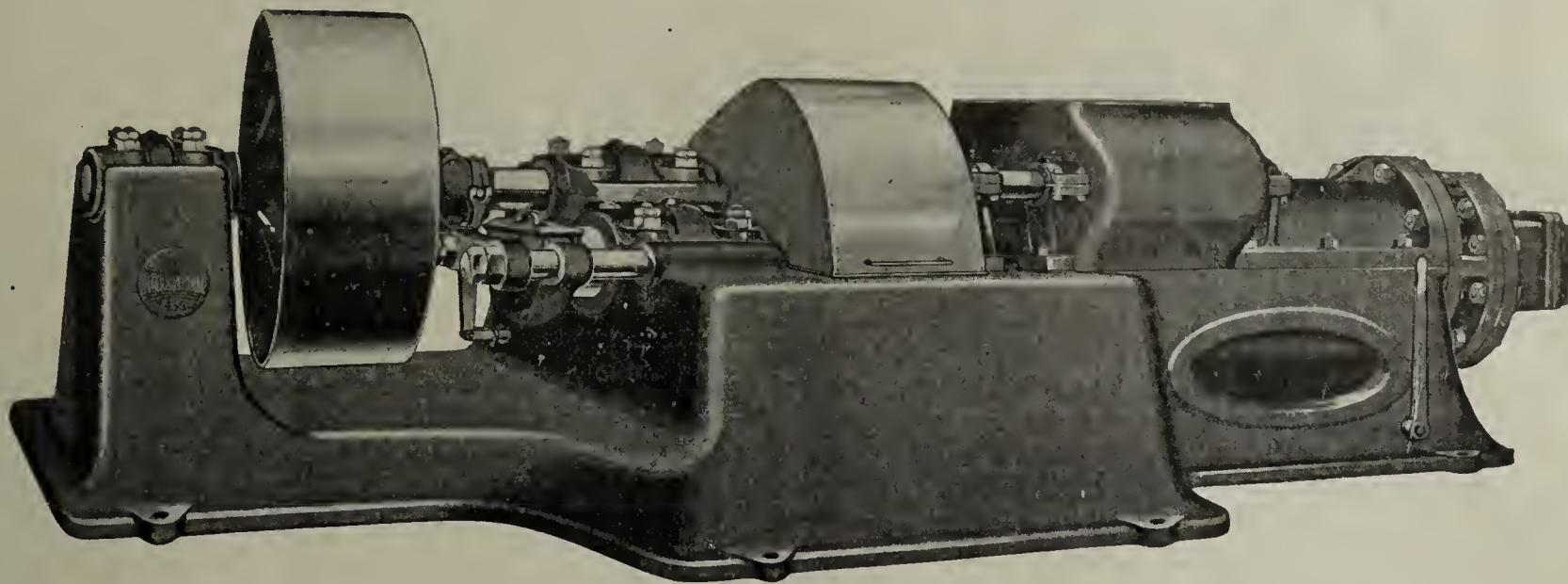
25 Years Daily Service

And still at it, are the records of many PERFECT CLAY SCREENS, producing a satisfactory product which insures better and more uniform drying, burning, with greater per cent of high grade finished product. SAVES FUEL and LABOR, and is positively the only SCREEN ADJUSTABLE TO THE VARIATIONS OF CLAY FROM DAY TO DAY. NO VIBRATIONS. NO NOISE. FIRST COST AND UPKEEP VERY LOW and every Screen absolutely guaranteed satisfactory.

Write and ask how much saving we can promise you.

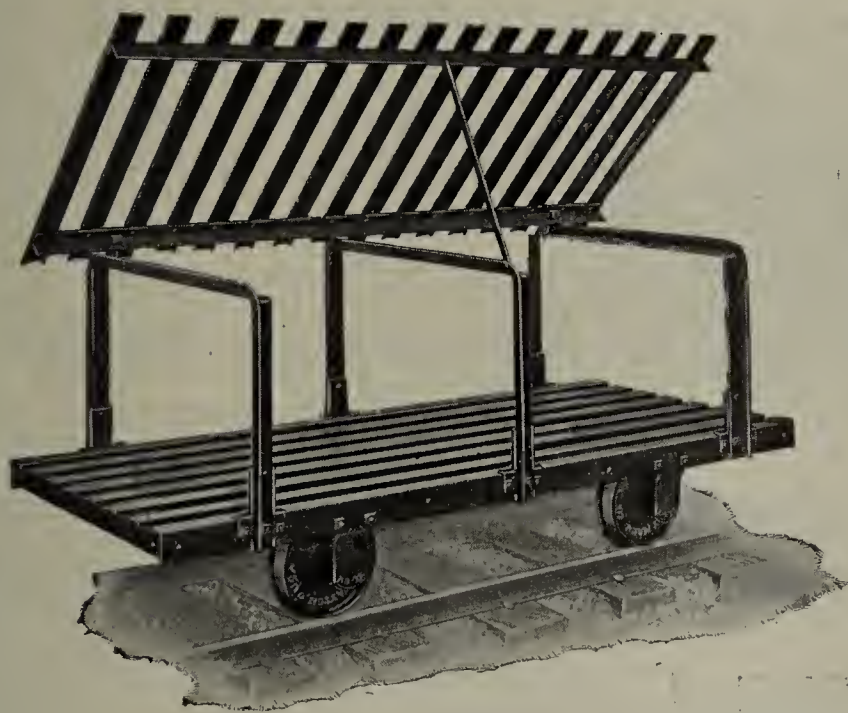
DUNLAP MANUFACTURING CO.

Bloomington, Ill.



Type 445—25M to 40M Brick per day
 Type 435—40M to 75M Brick per day
 Type 425—75M Brick per day Upward
 Or the Equivalent in Hollow-ware.

THREE MACHINES OF ADVANCED DESIGN
 TWO MAIN CASTINGS, SHAFTS AND GEARS



Type G

Dryer Cars
 and
 Industrial Cars
 of all types

A Complete Line of
 Machinery and Equipment
 for the Clay Plant.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

REVIEW OF C. B. M. A. CONVENTION.

(Continued from page 149.)

finish that counts and urged his audience to finish some constructive effort each day.

"What the Joint Research Council Is Doing" was the topic of a paper by Maurice B. Greenough, Cleveland, O. He detailed the work being carried on through the various universities and the U. S. Bureau of Mines and U. S. Bureau of Standards, i. e., actual burning methods, in accordance with research program laid down by the four associations financing the work.

R. T. Stull of the Bureau of Mines, Columbus, O., detailed the research work being carried on for the Joint Research Council. He described the pullman car being used by the corps of ceramic experts now at work on the Metropolitan Brick Company's plant at Canton, O., the eighteenth plant to be visited. This car is used for housing the men as well as for special laboratory work and testing. Permanent beds, kitchen and dining room equipment sufficient for the six men now employed, also complete laboratory facilities, dark room, office desks and supplies, also tools and electric welder for repair work, shower baths, hot water heater, etc., are contained in this specially prepared car which is side tracked at plant to be inspected and when work is completed, hooked on to the train that will carry it to the next plant in the schedule. The government allows a lower rate on mileage for this car but the up-keep and salaries and expense of the work is paid from the \$10,000 furnished by the four associations and \$15,000 which the U. S. Bureau of Mines will add to the fund. Paving brick, common brick, face brick and hollow tile plants are to be thoroughly covered

in the work which will point out ways and means of cutting the cost of burning to the lowest possible margin in keeping with good ceramic practice. The work being done is splendid and much valuable information has been obtained which will be given out to the industry through the government bureau bulletins in due course of time.

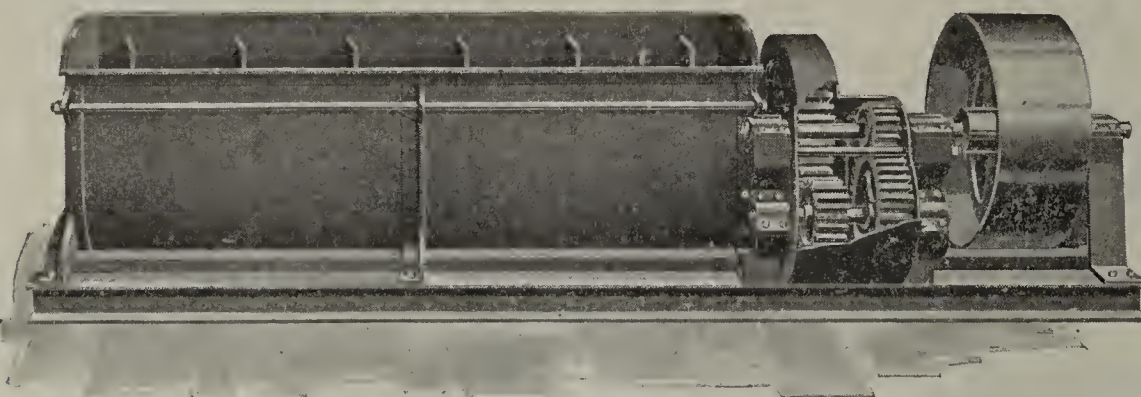
Ross C. Purdy made a short talk on the "Value of Research Work," stated that the A. C. S. would carry on investigations, correlate the results obtained, which will show the need of radical changes in burning and operating methods. He urged co-operation with the Heavy Clay Products Division of the A. C. S. in this particular.

George Clippert of Detroit, explained "What Detroit Has Done in Way of Local Advertising and Boosting Common Brick Construction." He spoke of the inroads hollow tile had made in Detroit previous to the tests on brick and hollow tile that had been made at Ann Arbor, but stated that since that investigation, hollow tile had given them little trouble for the brickmakers had done effective advertising in setting forth the superior merits of brick.

Charles Bryan, Detroit, detailed the advertising campaign that has been waged and is being waged in Detroit.

L. S. Collins, Los Angeles, read a paper on the subject, "Selling 500 Ideal Wall Houses." He gave the history of the ideal wall propaganda in California, the brick men selling the 500 ideal houses on the theory of not losing a customer. He stated that advertising creates markets, stimulates trade and educates the public and that while in 1917 the demand for brick was nil, and a brick house was an oddity, today it is impossible to meet demand. The campaign was undertaken by individual firms from 1917 on. In-

(Continued on page 178.)

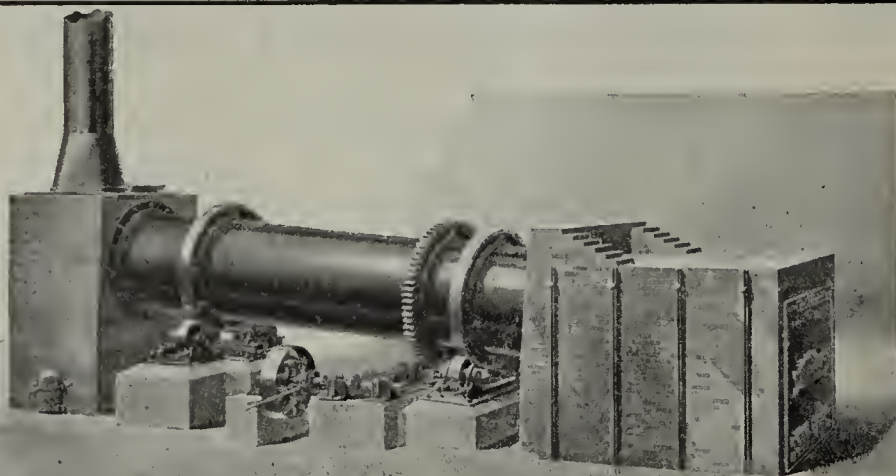


TORONTO PUG MILLS

Built in either double or single geared models, any length from 10'0" to 14'0"
Send us your inquiries.

Toronto Foundry & Mach. Co.

Toronto, Ohio.



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO

WHY

DO OPERATORS OF
DRY PANS, WET PANS, CRUSHERS,
SEWER PIPE AND TILE
MACHINERY

PREFER

STEVENSON EQUIPMENT

THERE'S A REASON

A LIST OF NEAREST USERS ON REQUEST
ASK THEM

THE STEVENSON COMPANY

GENERAL OFFICES
AND
WORKS
Wellsville = = Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING
Chicago = = = Illinois

Do You Want to Increase Your Profits?

All up-draft kiln users can increase their profits by looking up my add on page 180, and either answering at once or by cutting the add out and reading it over every day until it inspires action. I insure complete success before you need adopt or pay for it.

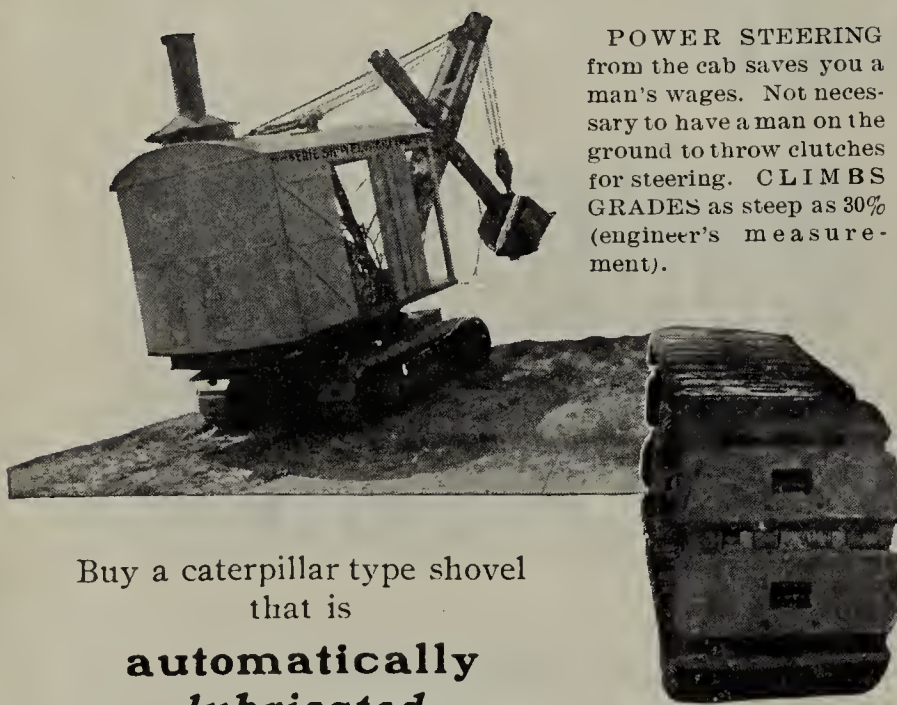
F. W. GLECKLER, Oak Harbor, Ohio

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher, Indianapolis, Ind.



POWER STEERING from the cab saves you a man's wages. Not necessary to have a man on the ground to throw clutches for steering. CLIMBS GRADES as steep as 30% (engineer's measurement).

Buy a caterpillar type shovel that is
automatically lubricated

The lubrication of the caterpillar type ERIE greatly reduces friction, and gives you much more climbing power and speed. It also assures you of steadier service and a much lower upkeep cost.

These features of the new 1922 ERIE, and many others, are interestingly described in our Bulletin W60. Write for a copy.

The treads of the caterpillar type ERIE are all-steel, practically indestructible. Every link pin is bushed, so that there is no wear on the link itself. Bushings when worn are easily replaced at slight expense.

BALL ENGINE CO., Erie, Pa., U. S. A.

Builders of ERIE Steam Shovels, Locomotive Cranes, Railway Ditchers.

ERIE Revolving Shovels **BALL** Engine Co. Erie, Pa.

REVIEW OF C. B. M. A. CONVENTION.

(Continued from page 176.)

quiries were greater from 1919 on while 1921 held greatest interest. 500 brick homes were built in Los Angeles in 1920. Plan books, pictures, circulars and newspaper ads were used to good effect in this work.

At this point, telegrams and letters from absentees were read. Mr. Hoblitz of Cleveland, had wired if the statement by the secretary that the price of common brick would soon be down to \$8 per thousand, which was being widely circulated over the country, was correct. Mr. Stoddard stated that he was misquoted. A telegram of felicitation from the International Bricklayers' and Masons' Union was read as were letters from Fritz Salmen of Slidell, La., and others.

J. A. Pugh, of Norfolk, Va., read a paper on "Getting in on the Ground Floor." This dealt with standardization of ware, promotion work and local advertising.

C. W. King, secretary of the Connecticut Brick Manufacturers' Association, Hartford, Conn., explained work being done by his organization to boost brick in Connecticut. There are nine firms in this association which represents a total production of 164 million brick annually. He explained how they are financing the advertising work, circulating architects, prospective builders, bricklayers, etc., and detailed the work of bill-board advertising. They have installed one and will soon have six more erected, 12x30 feet, costing \$196 each on which will appear the words, Save Continual Expense, Build with Brick, Ask us for Information. Connecticut Brick Manufacturers. He analyzed twelve estimates separately and showed average cost of brick work in all was only 10.2 per cent of total. This fact is being used in their advertising.

L. L. Stephenson, Birmingham, Ala., delivered an informal but very amusing talk on how he is getting people interested in brick homes in Birmingham.

Ernest C. Roberts of the Cleveland Builders Supply Company, Cleveland, O., told of the effective campaign being carried on in Cleveland and how they were spreading the truth regarding merits of brick in their monthly house organ, "Material Facts."

Wm. Carver, Cleveland, O., read a paper in which he deplored the lack of information as to strength of brick in the wall, cited need of accurate tests and told what the association is doing in this connection. He urged the brick-makers to look into their building codes and find out if they measured up to the proper standard.

D. Knickerbacker Boyd, of Philadelphia, Pa., read the report of Consulting Architect in which he detailed the work he had done during the past year including the making of the separate specification for clay brick in Committee C report. He mentioned the fact that common brick are being used to a great extent for sewer work in Philadelphia and that the Quaker City manufacturers are to give two bronze tablets for the two best brick buildings erected in 1922, a committee of architects to be the judges. From reports from forty cities, Mr. Boyd found that bricklayers are laying 1,143 brick per day instead of 500 as it had been rumored.

Secretary Stoddard closed the afternoon session with a talk on Organization and Promotion. He stated that their industry was in a deplorable condition before he took up the work but in the three years the C. B. M. A. had done a wonderful amount of good. He praised Mr. Boyd's work and detailed activities of the year. He told of conditions before and after they had the association. In 1914 there were 5,500 plants; in 1909, 5,000; in 1914, 3,600; in 1920, 1,700, and in 1922, 1,200, according to Mr. Stoddard's figures. He stated

(Continued on page 180.)

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

By using this system you can reduce your fuel cost and your labor cost. You can increase the amount of first grade ware. You can raise the selling value of all your ware. It will make more money for you than you have ever made per year before. If you doubt these statements go and see for yourself and be convinced. As a matter of education in burning clay ware visit the following plants:

U. S. Brick Co.	Tell City, Ind.
Huntingburg Pressed Brick Co.	Huntingburg, Ind.
Standard Brick Mfg. Co.	Evansville, Ind.
The Best Brick Co.	Evansville, Ind.
Kalamazoo Clay Co.	Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U.S.A.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

ARCH PROTECTOR FOR THE PERMANENT UP-DRAFT KILN.

At last, after centuries of worry about arch waste and about the poor quality of arch brick that the up-draft kiln user has been compelled to force upon the public, you will now be able to find ways and means for eliminating all waste in the arches.

It is not common horse sense to continue to waste your best hard brick, the brick in the arch heads should be among the best and most valuable in the kiln. My patented arch protector does the trick.

You may tell yourself that you do not need arch protectors, that you have always gotten along without and that you can work off the culls little by little with each order or sell them to some good fellow who does not object much. Think it over, brother. You may be able to make a living easier some other way, the same good fellow that willingly accepts culls at a good price would also be glad to escape with his life if held up at the point of a gun.

Arch brick is not all that you can save with this system, you can also save fuel. The heat spreading feature will in itself save from ten to fifteen per cent of fuel over and above the same class of efficiency when used in the same kiln, but the saving is much greater compared with the temporary or scove kiln. The writer now burns 300,000 brick with the same fuel that was formerly required to burn 200,000, besides being able to double the select grade.

It is not my aim to install this method only where conditions are ideal, but to supply ways and means of placing it wherever good arch brick would be appreciated. On receipt of \$15 I will give a permit to try and use my patented method in the year 1922. After it proves entirely satisfactory you may secure the permanent yard right by paying a balance of \$85. Otherwise you will owe nothing. In addition to the permit, I will send free my booklet on Setting and Operating the Up-Draft Kiln for Economy and Quality. I can also furnish free information for constructing proper headwalls, together with photographic views of forms and arches under construction.

All scove kiln users should be sure that this applies to your case in particular, it will be your life's best investment to borrow the money and build outside furnaces, if no more than 4½ feet wide and 5 feet high. Such head walls can be built with little expense except firebrick, grates and doors. Two such kilns will handle a great many brick in a season.

Don't delay, it is time to begin to get ready.

F. W. GLECKLER,
Oak Harbor, O.

REVIEW OF C. B. M. A. CONVENTION.

(Continued from page 178.)

that the association had contracts for three billion brick production, that the advertising fund in 1921 was \$100,000, while formerly it was \$150,000, that about 25,000 pieces of literature had been mailed to 8,000 architects, 15,500 pieces to building material dealers and 97,000 to contractors, while their advertisements in magazines had reached 5,648,000 and in newspapers 8,000,000 readers.

He emphasized need of making the trade mark as nationally known as possible and asked the members to hook up their local with national advertising. He concluded by detailing the supreme court ruling on the case of the Hardware Manufacturers' Association and stated that he had had his correspondence and files carefully examined by expert attorneys to prove that they were in no way violating the law as laid down in their ruling. This referring to price-fixing and market control.

Tuesday evening the delegates enjoyed a delightful dinner in Parlor A at which the only speakers were Senator George W. Cartwright, Philadelphia; Hon. Quin O'Brien, Chicago, and Toastmaster Chas. F. Krone, St. Louis; a few singing numbers enlivened the occasion.

Wednesday morning a paper on "Cost Accounting" was read by Henry W. Conway, Cleveland, O.

In the absence of Treasurer E. S. Barkwill, Secretary Stoddard read the report, which showed that the income from dues had been \$22,656.92, and advertising about \$87,000, sale of literature \$12,382, and initiation fees \$370. That magazine advertising had cost \$27,634, professional service, art work and engraving \$4,834.88. D. Knickerbacker Boyd \$7,214.17, other employes \$10,000, circulars \$4,000, postage \$1,600, office expense \$820, miscellaneous expenses \$19,030, and over \$3,000 for technical expense, and \$1,555.16 for directors' expenses. The furniture, literature, etc., is valued at \$14,000; the total pieces of literature mailed out including letters, etc., was figured at 452,000.

B. F. Webber of Chicago offered a resolution citing the evil of prison made brick which is to be addressed to President Harding to senators and representatives in Washington and governors of various states.

Reports of budget and new contract committees were not made.

The nominating committee recommended that J. P. Cahoon, Salt Lake City; Chas. S. Francis, Muskogee, Okla.; Wm. N. Cary, Albany, N. Y.; L. S. Collins, Los Angeles, Calif.; T. L. Herbert, Nashville, Tenn., and Thos. E. Wilson, Pittsburgh, Pa., be elected to three year term of directors, and that J. S. Pugh, Norfolk, Va., fill the unexpired term of W. E. Dunwody, Macon, Ga., who had resigned. The recommendation was accepted and the directors held a short meeting after which they reported to the convention that Chas. H. Bryan, Detroit, had been re-elected president; Ernest S. Barkwill, treasurer, and Wm. N. Cary, John P. Cahoon, Fritz Salmen and B. F. Webber, Chicago, had been selected as vice-presidents.

Anthony Ittner, a charter member of the N. B. M. A., was called upon for a speech, and he delighted the audience with reminiscences of his long life in the brick business. Mr. Ittner has been in the brick business nearly 70 years. He was the pioneer brick manufacturer of St. Louis.

The convention was then turned over to the machinery contingent who exhibited moving picture films and slides similar to those shown at N. B. M. A. Convention in Indianapolis the previous week.

Good roads and better streets not only mean an easier distribution for clay products, but they also mean an enlarged call for paving brick.



Brick Made Six Thousand Year Ago Mark The Ancient City of Babylon

The earliest burnt bricks known were made by the Babylonians more than 6,000 years ago.

The site of the ancient city of Babylon is still marked by huge mounds of bricks, the ruins of its great towers and walls. For centuries it has been the custom to carry away these bricks for the building of modern towns nearby.

It pays to remember that bricks made 6,000 years ago are still suitable for use as building material.

In this age of many new and varied building materials there is an occasional tendency to swing away from tried and true brick.

Brick will be increasingly used each year by reason of the interest and activities of brick manufacturers who at all times aggressively call attention to its many superiorities. They constantly improve their product, do everything possible to make prices more attractive and continually remember that the architect's and consumer's tastes govern the building contractor's choice.

They make them think of **BRICK FIRST.**

WHAT ONE MAN CAN DO

One man can—in fact is only needed—to operate the AutoBrik Machine. The AutoBrik just automatically speaking, eliminates the balance of the crew. The AutoBrik performs the work of dumping and pressing the clay, bumping the moulds with absolute uniformity, dumping the brick on pallets, delivering the pallets of brick to truckers or to a cable conveyer and putting the empty moulds into the sander, where they are properly sanded and are automatically delivered to the machine to be refilled.

No wonder the AutoBrik Machine is now cutting over-head, increasing profits and stimulating demand for a large and increasing number of brick manufacturers throughout the country—when you realize fully what **one man can accomplish** with the

AutoBrik

Further interesting detailed information about the AUTOBRIK will be sent upon request.

Machine

LANCASTER IRON WORKS, Inc.

Lancaster, Pennsylvania, U.S.A.

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use
of power and labor.

Cuts out the Powder Bill and danger
from the use of Explosives.

But best of all, it secures a perfect
mixture of the clay stratas, and you all
know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and
write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

NEBRASKA BRICK AND TILE MANUFACTURERS MEET.

THE seventh annual meeting of the Nebraska Brick and Tile Association was held in the Garden Room, Lincoln Hotel, January 25 and 26, Lincoln, Neb. The morning session of January 25 was given over to routine work, consisting of the reading of the minutes of the previous meeting, reports of various committees and appointment of new ones.

The afternoon session was called to order by President Waterman. A telegram from R. C. Purdy regretting his inability to be present was read by the secretary. Professor DeBaufre, of the Mechanical Engineering Department of the University of Nebraska, made a short talk on the prospects of creating a department of ceramics at the University. He felt if the brick manufacturers were sufficiently interested they might prevail upon the powers that be to create such a department, and volunteered assistance and co-operation in every way.

At this point the program was given over to a round-table talk, each delegate giving his experiences during the past season. The chief points of interest brought out were that business had been bad for most of them and that in order to make money in the brick business it was necessary to run as near to capacity as possible, for there was very little prospect of coal or wages being lower.

The open-price policy, creation of ceramic department and freight rates were topics chiefly discussed. The election of officers resulted as follows: Lloyd Hansen, Hastings, Neb., president; F. G. Burnham, York, Neb., vice-president; G. H. Zumwinkle, Lincoln, secretary-treasurer. The executive committee consists of the following: A. H. Farrens, B. Koehler, J. W. Turner, H. E. Fairchild and O. R. Martin.

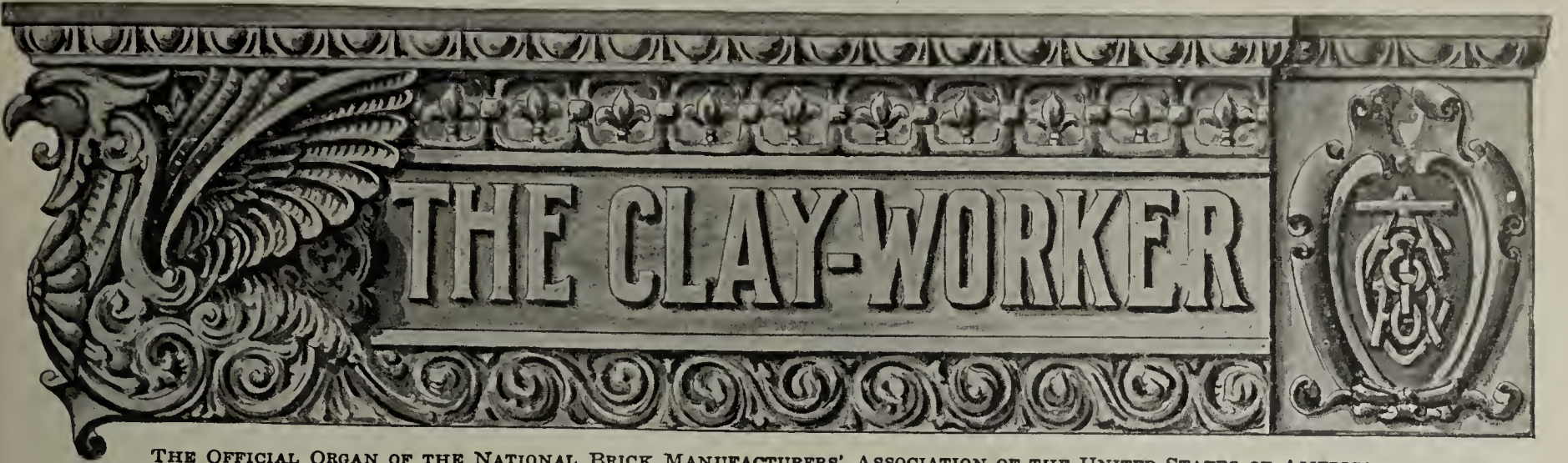
Wednesday evening the delegates enjoyed a banquet spread in the Chinese room of the hotel. President Hansen acted as toastmaster. Thorne Brown, of the State Railway Commission, compared the conditions we are now passing through with conditions of the past. He had clippings taken from newspapers which were quotations by Patrick Henry, Daniel Webster, and also some relating to conditions before, during and after the Civil War. Until Mr. Brown explained when these statements had been made, it seemed that they had been taken from articles which might have appeared in the papers within the past few years.

The other speaker at the banquet, Dr. George E. Condra, of the Department of Conservation and Soil Survey of the University of Nebraska, showed moving pictures of particular interest to the Nebraska citizens.

The Thursday morning session was opened with a discussion on brick and tile data and its use, the secretary being instructed to compile the data in connection with the brick and tile industry for the state, to be used in one of the bulletins of the Department of Conservation and Soil Survey of the University. A committee was also appointed to co-operate with Dr. Condra in making a movie film for the brick and tile industry of Nebraska.

Mr. M. Weil, of the National Bank of Commerce of Lincoln, made an address in which he emphasized the importance of our interest in legislation, referred to the work being done by the War Finance Corporation, the Soldiers' Bonus bill and other legislative matters. He concluded with a trip to Europe, covering the battle fields of France and also points in Germany.

The afternoon session was devoted to the discussion of an open-price policy, which was finally adopted, and the presentation of the report of the resolutions committee ended the deliberations.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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No. 3



OFFICIAL REPORT OF THIRTY-SIXTH ANNUAL CONVENTION OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION, INDIANAPOLIS, IND., JANUARY 25, 26, 27, 1922.*

**THE GREATEST OF ALL N. B. M. A. CONVENTIONS.
SECOND SESSION**

Thursday, 9:30 A. M. January 26, 1922

PRESIDENT WILSON: Gentlemen, the convention will come to order. I don't blame you for being slow to get in this morning, for I suppose most of you attended the smokerette last night and that was some entertainment. Naturally your sleep was somewhat disturbed. The first thing on the morning program is a paper on "Cutting Costs, Improving Products and Increasing Capacity" by E. W. McCullough, Manager of the Fabricated Chamber of Commerce of the United States, Washington, D. C.

Secretary Randall: Mr. McCullough is not able to be with us this morning. He appointed one of his associates to prepare the paper, and later found he too would be detained, but we have the paper which I will read.

**NECESSITY AND ADVANTAGES OF
A UNIFORM SYSTEM OF
ACCOUNTS.**

By Arthur Lazarus, Chief, Cost Accounting Bureau, Fabricated Production, Department of the Chamber of Commerce of U. S. A.

Mr. President and Gentlemen:

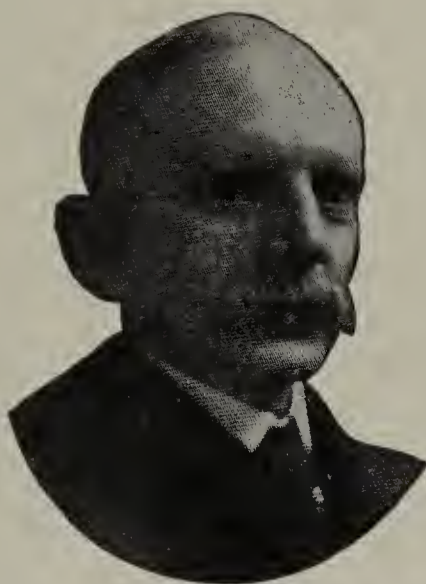
Before discussing the question of necessity and advantage of a uniform system of accounts, I should like to deal briefly

with the work and equipment of the United States Chamber of Commerce. Many business men do not realize the importance of this organization which they have built up at Washington, and which is like a faithful "watch dog" guarding their interests. No piece of legislation is ever introduced there affecting business that is not taken cognizance of and reported in some form to its members and to the business of the country. If the issue is one national in character, and timely in importance, it may be brought to referendum, thus gathering the opinions of over 1,400 commercial and trade organizations, representing hundreds of thousands of business men. It is on this referendum that the Chamber depends for direction as to what business wants done, for it does not assume arbitrary power at Washington in dealing with such matters. Over thirty such referendums have been taken in the last nine years, and the results in many instances are written into laws of national importance.

The Chamber is equipped with a Research Department to investigate and report on the introduction, progress, and disposition of legislation, issuing bulletins and reports from time to time thereon. It will also aid you when visiting Washington in reaching quickly the source of information you may be seeking. There has recently been organized in the Chamber of Commerce the following departments: Natural Resource Production, Fabricated Production, Domestic Distribution, Insurance, Foreign, Commerce, Transportation and Communication, Finance and Civic Development. These departments have been equipped to render direct service to all divisions of industry and commerce, and no doubt you will want to make use of several of them.

The Fabricated Production Department, of whose staff I am a member, concerns itself not only with cost accounting but likewise with such problems as standardization, the elimination of excess varieties, and business cycles.

I turn now to the question of uniform cost accounting. The business man asks certain blunt practical questions when an improvement such as uniform cost accounting is proposed to him. He wants to know: 1. What it is; 2. Who else is using it; 3. What made them use it; 4. What advantages others are deriving



The First N. B. M. A. Delegate to Arrive
—Ex-Pres. Wm. Conway, Philadelphia

from it; 5. How all this applies to his case. The Fabricated Production Department is in a favorable position to answer these questions so far as they relate to uniform cost accounting. We have on record the cost systems, as well as the experiences, of over 100 trade associations who have successfully installed or are working upon uniform cost accounting. We have carefully analyzed and digested this record.

As to question one, by a uniform cost system is meant a system uniform as to fundamentals, and not as to details, for any given industry,—a cost system that will meet the requirements of both the large and small manufacturer within the industry. Such a cost system seeks agreement on all those expenses which are properly chargeable into costs to exclude those expenses which cannot be properly charged against cost. Such a cost system seeks to establish the proper departments of a given industry or establishment so that those departments can be conducted on an independently profit sharing basis. Such a cost system establishes a proper method of distribution of overhead about which there usually exists the greatest variety of practice.

The uniform cost system likewise seeks a common treatment of material and labor, a consistent policy toward depreciation, executive's salaries, rent and bad debts, the tying-up of the financial and cost accounts, plus a minimum of auxiliary records such as the perpetual inventory, plant ledger and recapitulation of costs. A uniform cost system is something more than a price list, of classification of accounts, or an estimating or a cost sheet.

Second, are any industries operating under a uniform system of accounts as thus conceived: To quote the entire list would



Ex-President George H. Clippert, Detroit, Mich.

be both tedious and unnecessary. Each year, almost each month, some new industry starts operation under a uniform system of accounts. Associations representing industries so varied as the following have found it desirable to build up uniform cost practices:

American Envelope Manufacturers' Association.
American Drop Forge Association.
American Face Brick Association.
American Malleable Castings Association.
Associated Manufacturers of Electrical Equipment.
Atlantic Coast Shipbuilders' Association.
Biscuit and Cracker Manufacturers' Association.
Four-Ones Box Makers' Association.
Heating and Piping Contractors National Association.
Hydraulic Society, New York.

You see I have only gotten down to the I's. There are still some sixty associations I could add to the list.

Why has one trade association after another adopted uniform cost system? Partly out of sheer necessity, because they had no other choice. If one country develops a superior weapon,—say the tank,—the other must follow suit or suffer the consequences. The industry with the uniform cost system,—the single outlook,—has an immense advantage if we realize that such a system means for each concern a better control of purchases, a better understanding of the relation of output to sales, a price based on knowledge not guess-work. In other words, it means higher organization, greater cohesiveness, unity without while retaining keen competition within. There is a competition of industries as well as

individuals within the industry, an elbowing for room, a continuous process of readjustment, a tussle for greater or less breathing space. In this relation, this interdependence of industry to industry, many industries have found the uniform cost system necessary to maintain their place and status. They have moved forward instinctively, not consciously, to the uniform cost system, as a measure of self-defense, because they felt they were losing ground in a way they could not entirely fathom.

More specifically industries have had their eyes opened to the need of uniform cost accounting by coming into contact with regulatory bodies; be it tariff commissions, fuel or food commissions, federal trade commissions, labor commissions, labor adjustment board, tax committees, or what. These bodies insist upon facts, not shrewd estimates, and many industries have been stunned by injustices they could have easily avoided if they had been in a position to state their case accurately and scientifically. Many an industry has been started on the road to uniform cost accounting because of failure to produce facts when most needed.

Adversity, too, of a different kind has developed interest in uniform cost accounting. Industrial groups have occasionally called in industrial engineers to make a survey of conditions, and to report upon sales, expenses, turn-overs and profits from such records as existed. One such industrial group found they were getting a four per cent return on the invested capital. Another investigation in 88 cities revealed a 35 per cent profit on a cost of sales of \$250,000,000. The uniform cost system would thereupon suggest itself as one means to end this hand to mouth existence, for if each member based his selling price individually on cost of production plus a fair return the entire tone and level of the industry would be improved and raised.

The uniform cost system in other instances is due to the prosperity of the industry, because a prosperous industry attracts all sorts of competition,—competition on the part of the reckless and ignorant. Such competition believes it is unnecessary to know the costs of doing business, and figures that all that is necessary to get business is to cut prices. A uniform cost system will reveal to you the profitable and unprofitable lines, and on lines where the margin of profit is large, you can cut even under your reckless competitor, but where the margin is close you will let him go ahead and undersell you, with the result that he gets all the unprofitable business and after a while goes under.

Uniform cost systems have come, too, as part of an educational and housecleaning effort. Business men who take a proper pride in their plant and equipment have often allowed their administration records to lag far behind—so that a modern plant will house and be governed by antiquated methods of control. Losses, waste and penalties are incurred that might easily be avoided, and bad spirit created because of a lack of understanding. Business men are still charging no executives' salaries, because they happen to be the proprietors or partners; rent is not charged into costs because the firm happens to own the building, bad debts not recorded because a given year may be free from them, and depreciation not estimated because it is not seen. The uniform cost system is part of a general enlightenment, a general reconsideration of values, a general interchange of methods and experiences. It does not and should not curb competition, but it starts competition from a higher range upon a more equitable basis—a basis of understanding not of blind groping.

The foregoing are some of the considerations that have tempted trade associations to adopt uniform cost systems. What do they tell us of the actual working of such systems? What benefits are they deriving? One trade association secretary inquired, "Have you been enabled to get a better profit for your product since you installed the Cost System?" and brought a unanimous "Yes." Let me quote from some of the replies. "With a cost system we are enabled to get a fair price for our work. Without it pricing would be a guessing contest, and either we or our customers would be cheated." "Because," states another, "it gives us our costs in actual figures, which are astonishing at times, when compared with supposed or theoretical figures." "We found," writes a third, "we were doing work at a loss and raised prices, lost some work thereby but not so much money."

At a risk of boring you, I will enumerate some of the advantages practical business men claim they are deriving from operation under a uniform cost system:

1. Strengthens position of industry in dealing with governmental and regulatory bodies.
2. Inspires confidence that selling prices are determined upon a fair and equitable basis.
3. Solves disputed points of accounting within the industry authoritatively.
4. Makes possible a more intelligent competition.
5. Reveals lines within the industry which have been marketed on an unprofitable basis.

6. Shows the danger line below which goods cannot be sold at a profit, thus serving as an insurer of profits.

7. Acts as a common guide to the value, efficiency and wastes of workers, machines, methods, operations and plants.

8. Becomes a reliable guide and basis for estimating prospective business, thus acting as a forerunner for comprehensive production statistics.

9. Furnishes current reports for comparing major cost items with standards, which are predetermined and thereby measure and increase operating efficiency.

10. Establishes a standard code of accounting practice, so that if your cost clerk or bookkeeper leaves you, his successor will step into a system whose operation has been fully and completely formulated.

I would like also to quote directly concerning the advantages one business house believes it is securing from a uniform cost system. I am purposely not selecting a large organization, because when a large organization is quoted there is often the feeling that a uniform system is all very well for a large and tremendous organization but has no usefulness for the small or middle sized concern. This from a textile concern:

"The cost system which we installed several years ago has paid for itself many times over. It unerringly shows up production danger points and the unprofitable styles and points out the ones on which to make effort for increased sales with profit.

"You know how close you can go to the line in making low prices, and how long you can continue at a loss, for your cost system is all the time registering your financial position, where under the old method you would wait until inventory period and then perhaps find you were broke. It didn't matter so much during the war period when prices were continually advancing, but from now on with business slow and competition keen, a cost system will prove invaluable."

I am not prepared, without knowing more of the facts of the diversified industries represented here, to say how great a boon or improvement uniform cost accounting would be to you. Do not, however, defer interest in the undertaking because you feel your industry is different or more complicated than any other. I venture to say every one of the seventy industries which have installed uniform cost systems started out with that assumption, but the difficulties and differences vanished or were surmounted upon investigation. Do not defer the undertaking because you are today comparatively free from governmental interference. No one knows how long you will be so fortunately situated, and the best antidote for annoying regulation is a full possession of the facts. Do not defer uniform cost system because of a feeling that your industry, among all others, is immune to economic influences and the economic forces. It is not so. Do not defer it because of a feeling that a uniform cost system will blunt competition. If such were the case the Chamber of Commerce of the U. S. A. would be the last agency to endorse the idea. The competition under a uniform cost system will be as keen as ever, though we trust somewhat more enlightened and somewhat better informed. But as much as the Fabricated Production Department wishes you to engage in the planning of uniform cost system do not act upon the idea in your particular industry until the ground is thoroughly prepared and interest so aroused that the industry will demand uniform cost accounting and not have it thrust upon it. If the Fabricated Production Department can aid in creating this interest, or be of any service within the scope of the Department, please call upon us. (Applause.)

President Wilson: That is a very exhaustive paper, but as Mr. Ittner who was down to discuss it is not present, I think we may pass this and take up the next number on the program. "Drying Brick with Waste Heat from Up-Draft Kilns", by A. V. Sturgeon, Suffolk, Va.

Secretary Randall: Mr. Suffolk found at the last minute he could not get away. He is an old time member of the Association. We have a letter from him which explains his absence. He has kindly sent his paper which I will read.

DRYING BRICK WITH WASTE HEAT FROM UP-DRAFT KILNS.

A. V. Sturgeon, Suffolk, Va.

Mr. President and Gentlemen National Brick Manufacturers' Ass'n:

The life and existence of most manufacturing concerns today, depend on the ability of the operators to save the waste and reduce the cost of the manufactured product. Especially is this true of the brick and burned clay industry, since labor and fuel are the two predominant items of cost. The expense of labor and fuel, as all brick makers have experienced, has risen to such abnormal

heights in the past few years, that he who is not conserving the waste, can hope to remain very long in the game.

Great improvements have been made in the past few years, in preheating the brick in burning, and in other ways and methods. Yet, we find a large percentage of the brick manufacturers still using the old up draft or clamp kilns, without making any effort to kiln construction, in the way of down draft, continuous, and tunnel kilns, using the waste heat for drying the green brick, for saving or utilizing the waste heat.

The question we will discuss very briefly is: Can waste heat be utilized to an advantage from burning brick in up draft or ordinary clamp kilns? If so, has it been done, and how can it be accomplished?

The writer installed and operated very successfully, for a number of years, a system of drying with waste heat from up draft kilns.

The particular installation I refer to was on a plant, with a capacity of from forty to fifty thousand building brick per day. Employing four ordinary clamp kilns of good construction, holding three hundred and fifty thousand each. A standard type sixteen tunnel hot air direct fired dryer, using furnace and fan draft. The arrangement would have been better, however, if, instead of the four kilns of three hundred and fifty thousand capacity, there had been five kilns of two hundred and fifty thousand capacity. The rotation would have been much better, and the heat more evenly distributed over the period of burning and drying.

The method employed in taking the heat from the clamp kilns was: By building an under ground tunnel extending along one end of the kilns running to the fan, and thence to the dryer. At



A. V. Sturgeon, Suffolk, Va.

the ends of the kilns two brick flues, 30 inches in diameter, one on either side of the opening into the kilns was erected, on the outside of the kiln walls, extending to the top of the wall, and connecting at the bottom with the under ground tunnel. The tops of the flues were capped over, and an opening made into the kiln just under the platting.

The setting was carried on in the ordinary way, until a few courses of the top, when small flues were left in the setting, about two feet apart running length ways of the kiln, and connecting with cross flues of like construction entering the two stacks leading to the under ground tunnel leading to the fan and dryer.

The burning was conducted the same as in any up draft kiln, until the water smoke was off, and the kiln hot to the top, when the platting was put down and closed up tight. A thin coat of daub was spread over the top, and swept into the cracks, closing up the kiln tight. The fan was then turned on, and the heat taken up through the brick until it strikes the tight course, passes along through the small flues left in the setting, down the brick stacks through the under ground tunnel to the dryer.

Direct heat while burning, after passing through the brick is also used for drying for three or four days during the burning period, and from four to five days during the cooling period, thus giving from six to nine days drying from each kiln. This heat dried the brick for the next kiln made, and so on in rotation.

The only difficulty experienced in the method was, a slight deterioration in the cars from the action of the sulphur gases. This was overcome by a dip vat of crude oil through which the cars were run about twice a month.

The fuel cost on this plant for drying the brick by direct heat,

with coal at three to four dollars per ton, was sixty to seventy five cents per thousand brick.

Therefore, with a capacity of forty to fifty thousand per day, it is easy to figure the saving by utilizing the waste heat. Twenty-five to thirty dollars per day is no mean saving for any concern. A reasonable profit alone for a business of this size. More, I fear than a great many brick plants are realizing today. Yet, we find this waste going on every day on many of the yards over the country today.

Gentlemen, the time and necessity has arrived when the brick-maker must reduce the cost of his products. Building costs are too high, curtailing building; what otherwise would be a building activity, is blocked by the high cost of materials of all kinds, and the price of labor. The only hope for the brick manufacturer is in improved machinery, and more attention to the conservation of the waste. (Applause.)

President Wilson: The discussion of this paper is to be led by Mr. M. E. Gregory of Corning, N. Y.

Discussion.

M. E. Gregory: I do not know why they put me down to lead in a discussion of the utilization of waste heat from up-draft kilns. My experience has been with the down draft kiln. I believe however, there are men here better qualified to discuss the subject than I. Think it is a subject which should be discussed in our convention because it is important. For several years we have been utilizing the waste heat from



William Burgess, Toronto, Ont., Canada.

cooling kilns although not as fully as I would like to: When we put it in we did not know as much about the requirements as we do today. At the present time I am making investigations to see what changes are necessary to make it possible to utilize to better advantage the waste heat from our kilns. With your permission I will read some data which has just been sent me by a practical man.

"Thirty thousand paving blocks from which one pound of moisture must be driven off equals 30,000 pounds of moisture total per 24 hours. Fifty thousand brick from which $\frac{3}{4}$ -pound moisture must be driven off equals 37,500 pounds per 24 hours. Adding the above two items we get 67,500 total pounds of water to be evaporated every 24 hours, or 2,812 pounds of water to be evaporated per hour. This is the total capacity of your dryer and therefore we are taking one-half of same to be included in the north side apparatus, thus there will be required to be evaporated 1,406 pounds of water per hour.

"In addition to heat necessary to drive off this water, additional heat will be needed to raise the wet blocks from 50 to 180 degrees. It will also be necessary to heat the iron cars on which bricks are from 50 degrees to 180 degrees; also be necessary to raise the temperature of the water in the brick from 50 degrees to 130. The foresaying is driven off. There will also be a heat loss from the building, adding up

all these we find that for one-half the drier, it will be necessary to furnish three million one hundred and sixty b. t. u. an hour. This is the amount of heat that is necessary to furnish at the present time. Now let us look at the heat that will be available from the kilns. Each kiln contains 45,000 paving block at ten pound equal 450,000 pounds; 10,000 common brick at $4\frac{1}{2}$ pounds equal 45,000 pounds, or an approximate total of 495,000 brick in each kiln.

"Let us figure that the cooling period will be four days and that two kilns can be drawn from each day to furnish heat for two days, or in other words, the heat available from the kiln figuring from this method will be half the total heat in the kiln per day. Figuring that this kiln will start cooling at 20,000 degrees, and that heat can be taken from same before it reaches 400 degrees the total available b. t. u. per hour, will be 3,333,000. We have determined that 3,160,000 b. t. u. were required for the drier and that 3,333,000 b. t. u. were available. Thus the plant will furnish sufficient heat for the drier, if the kiln can be rotated every fourteen or fifteen days."

Christopher Steadman: One question about taking waste heat from up-draft kilns; we have been doing that for sixteen years. We do not take it from the top; we take it from the bottom and sides of the kiln. We do not take it from the burning kiln, but as soon as the kiln is finished, we put an elbow from the kiln to the duct running to the dryer, and turn the fan loose on it. We get about 50 per cent of the coal for the amount put in. If it takes 100 tons of coal to burn a kiln of brick, we get about 50 tons. We cannot attach it until the kiln is completed. It interferes too much with a uniform burn, but there is nothing difficult about drying with the waste draft from the up-draft kilns.

J. H. Chambers: How about the discoloration?

Mr. Steadman: We have no trouble. We did water-smoke with the waste heat, but found it was more valuable in the dryer.

President Wilson: Does someone else wish to speak on this subject? I am very much interested in this use of waste heat from the kilns. There was a gentleman in my office a short time ago, a kiln builder, who said he had a patent by which he takes the heat from the kilns while they are burning, and it does not interfere with the burning of the brick. I doubt whether it can be done, but he says it can, so if any of you have had any experience along this line, I would like to hear it.

Mr. Steadman: To avoid scum or discoloration in up-draft kilns—I am an up-draft kiln man—you must first dry the brick. We dry them, using a blower; when brick are thoroughly dried they take the heat without discoloration.

President Wilson: I am like Mr. Gregory here, I am interested in the down-draft kiln. Both our yards have down-draft kilns, and consequently I would like to have the experience of men who are using down-draft kilns.

William Burgess, Toronto, Canada: We have used the waste heat from down-draft kilns for twenty years. We originally took it from the top of the kiln. Our pipes played out, and now we have changed our method and take it from the bottom. In place of putting the iron duct over the top we built brick tunnels under the ground and take the heat in that way. We find in regard to discoloration; for our ordinary building brick we did not care if they were discolored or scummed, but for the front or face brick, or the "tapestry" brick we eliminate the scum by turning the gases loose in the air for three or four hours after the kiln is finished, then you can attach your fans, and you will find you eliminate the discoloration.

President Wilson: This is a very important subject to

those making a change in order to be sure they are not wasting money and not taking any chances in injuring the quality of their product.

Mr. Dunwody: Down in Georgia, we have been for a number of years drying brick with waste heat. It is already worked out to a scientific basis, and any man who contemplates using it the best thing for him to do is to get a first-class engineer. We have waste heat for about 25 per cent more brick than we burn. We are using the Miller system in batteries of nine. When we finish one battery, it gives us 65,000 brick per day. We could easily dry 75,000. If any man contemplates adopting the waste heat system, the first thing to do is to spend some money on a first-class engineer. There is no ifs or ands or buts about it in the practicability of drying with waste heat.

President Wilson: Do you have any trouble with discoloration?

Mr. Dunwody: Sometimes we would run out of waste heat and by pulling the heat straight from the kilns to the dryer, we would find the discoloration. After a kiln is burned, we let it stand 12 hours or until the products of combustion have been dissipated, then we turn it into the waste heat fans and don't get any gases. It is the sulphurous gases, the products of combustion that cause the trouble. Simply take the dry heat and you won't have any discoloration. That is, we don't.

President Wilson: Any one else any testimony to offer? If not, we will pass up this subject, interesting as it is. This is a very good place to get testimony. We think the information brought out will be of great interest to a great many. What is next, Mr. Secretary?

Secretary Randall: We will take up now a question many of you have asked about—"The Transmogrification of the Common Brick." It is a process by which we hope to change common brick with little added expense into a front brick. Major E. Gates, of Chicago, son of our beloved Will Gates, is the author of this paper. In order to determine just how this would work out on ordinary plants in various sections of the country, we got green brick from six or seven different states and sent them out to the terra cotta plant and they made the application, burned the brick and we have them here to illustrate this paper. We have here this first row, brick from Will Dickinson's plant in Arkansas. The next row of brick are from Dunwody's plant in Georgia; the next from the Progress Press Brick & Machine Company's plant in St. Louis; the next the Burton-Townsend plant at Zanesville, Ohio; the next are Detroit brick from George Clippert's plant. The next are ordinary Chicago brick, you would not guess it. They themselves do not know they made such fine brick; Chicago brick are maligned always. These little brick on the end are from the plant of Joe Post in Long Island.

"THE TRANSMOGRIFICATION OF THE COMMON BRICK."

Major E. Gates, Chicago, Ill.

Mr. President, and Gentlemen of the Convention:

It is rather hard for a terra cotta man to come before a brick convention and explain the use of colors on brick. However, I am going to assume certain conditions in the brick industry, and if I am wrong don't jump on me too hard. I think it will be necessary to go a little bit into what I consider the present condition of the brick industry. I should like to liken it to the terra cotta industry of some years back, at which time what colors we manufactured were body colors. If we wanted red terra cotta, we made a red body; if we wanted a grey terra cotta, we made a grey body; if we wanted buff, we made a buff body, and so on. It was quite limited, due to the expense. We moved a little further from that and put on a speckled surface. We went to another stage, enam-

eled terra cotta. This was brown at first, because we were getting fads in colors. With the speckling, it did not last, it became dull and dirty. When we came to speckling, we came to a more serious difficulty than we had with the slips. At the present time, the brick industry is at about the same stage as we were when we were speckling common clay bodies with slip. The reason we went into the speckled body was the demand for variegated surfaces. In the brick business you get this effect by the variation of the clay and by the rough surface texture of the brick. We are called upon in the terra cotta industry to match some fad in color, and we have to do it by coloring, not by surface. We do it by mixing up the proper colors. All rough surfaces take some dark color, or some variation in order to show light to dark.

In running these brick we made no attempt to fit the slip to the body. We made no attempt to burn them at the temperature the brick were supposed to be burned. We simply



M. E. Gates, Chicago, Ill.

took the raw clays, put a little coloring oxide on them, sprayed them and burned them in our ordinary terra cotta kilns. You will notice there is not a great deal of difference in the color of the brick, practically no variation. When you come to spraying speckles on terra cotta you get a great many variations, due to the fact that the man sprays on too much, or too little. If he puts on too much blue he gets the terra cotta too blue, or any other color.

In the process we have developed for terra cotta, which we call pulsichrome, we have a machine which measures the color that is put on for more than two colors. That is, if we put the white and black, we measure the colors, and they are both put on at the same time; it don't make any difference how much he puts on whether a half or a quarter of an inch, when he gets done he has so much just as when you put manganese in. You have so much manganese and you get away from too much color.

I cannot go very far with a talk like this. I hesitate to

discuss this proposition because I know so little about the brick business. I would rather have questions asked me. I do not know how much you understand about the spraying.

Discussion.

M. H. Donnelly, New Britain, Conn.: Do you spray each individual brick?

Mr. Gates: In the terra cotta business we spray each individual piece of terra cotta, but not so with brick.

Mr. Dunwody: Do you spray it dry or wet?

Mr. Gates: Dry. We use a little bit different system from this. The machine is built to throw the color without any air about ten or fifteen feet, not so it strikes it very hard. It is a great advantage in applying the slip or enamel on any body. If you take a rubber band and try to fit it on a very thin piece of tissue paper, you can stretch the rubber band without breaking the band or the tissue paper. The same is true of the terra cotta body. If the same slip is put on thin it will not cause trouble as it will if put on thick.

Mr. W. P. Blair: Does the material come through the air light enough to fall in a coat?

Mr. Gates: I am sorry I cannot operate the machine here,



John J. Moroney, Chicago, Ill.

but every one here would be covered with the stuff. It reaches the brick about the size of a raindrop. I happen to have a couple of pieces of terra cotta with me made by the same process by which we are making the small spot. I wish I had one of the larger spots. These are some of the samples we are using to demonstrate the speckled terra cotta. One is not a true pulsichrome color, but the other is. The first job we had we asked our district manager what he noticed about the job. He said he could see the spots two blocks away.

Mr. Dunwody: Is the spray put on the material wet just as effective as dry?

Mr. Gates: Yes, on the wet surface, if not too wet. It allows a little less friction when the slip hits the surface, and sprays it in larger spots and makes a better coat.

Mr. Dunwody: What is your range of colors?

Mr. Gates: In the terra cotta business we do not need a range of colors, but we have not reached the limit.

Mr. Dunwody: Then you can put on buff or any color?

Mr. Gates: Yes; in the old days, as I have said, when we wanted red we made it on the body. Now, we put the red on a very light body.

Mr. Dunwody: We used to make a brick like that, but we had trouble when we put the enamel on, and when the enamel chipped, it showed the red underneath. I suppose the different colors vary. What do you estimate is the expense per thousand brick?

Mr. Gates: We use different oxides, different in price. Ordinarily, I think it would take about thirty pounds of material for a thousand of brick, about the same proportion we use in terra cotta, and for the cheapest colors, it would not cost more than 1½ cents a pound, say 60 cents a thousand would be the added cost. In burning brick you know what your clay needs.

James P. Martin, Lancaster, Pa.: Can you put this on a sand face brick? That is, would the sand on the sand molded brick interfere?

Mr. Gates: Sand face would cause certain difficulties. I believe it would be necessary to brush the sand off when the brick were dry, before you sprayed it. If the brick were wet it might not be necessary.

John J. Moroney, Chicago: Which of those brick are the Detroit brick? How did they take this slip?

Mr. Gates: The fifth row from the left.

Ross C. Purdy: I do not believe you understand the question, Major. The spray will not come off because of the sand?

Mr. Gates: Not unless there is a sufficient amount of sand to interfere with the surface of the brick.

Mr. Chambers: Is the machine with which you spray the brick sufficiently flexible to allow you to apply it to the brick as the column comes from the cutter?

Mr. Gates: Of course we only use the machine in putting it on large pieces of terra cotta. It would depend on the speed with which the clay was coming from the machine.

Mr. Randall: I was about to leave for the East and I phoned out to the Terra Cotta Company to ask how the brick had come out. Mr. Lacey, the superintendent, said the brick are all dead failures. They had made some real enamel brick of terra cotta clay and they were very beautiful. My son went out and brought in the culls and we have them over at my office now, and I felt much better when I got back and saw them. They were just what I wanted—a semi-glazed brick, not an enameled brick, at a moderate cost, so we can cheapen the cost of ordinary construction, where a moderate cost brick required. I was tickled with the samples. My idea was this application could be made to the brick either before or after they are dried, on the car, or in the column, requiring no rehandling, and burned in the ordinary way. If you can make this character of brick for front purposes out of your common brick, and sell them for a few dollars more than for common brick, you are getting somewhere. That was my idea in this demonstration.

Mr. Dunwody: In handling the green brick after they are sprayed, will the spray rub off?

Mr. Gates: Of course in the terra cotta industry we have labored to avoid that difficulty because we have to rehandle every piece. We can make slips that stand a lot of handling. The enamels are more difficult.

Mr. Chambers: I think this thing is very, very interesting, but I wanted to bring out whether you could take the machine and apply the spray to the column as it comes from the machine before it goes to the cutter. Will you spoil the brick, or had you better consider applying the slip after the brick are placed on the car?

Mr. Gates: This may be one of the technical points. It would depend on the speed which this would put it on. This is the machine we ordinarily use in the terra cotta trade and we figure a man could spray probably ten or fifteen thousand brick a day, if the brick were brought in front of him. It

would depend on how fast you could bring them. If you brought them faster, he could spray them faster. If you want to spray a column, it might be necessary to put on two or three or a multiple of this spraying machine. I might answer a few questions if they are asked about the operation of the machine. I have a diagram here, showing the working of the machine. This machine is adapted for three colors. Each tube here carries one color. In the machine itself there are three little fingers which are kept working. This machine runs about three times as fast ordinarily, but this speed shows the operation a little better. (Mr. Gates then displayed one of the little spraying machines in operation, being run by electric power.) It works like a mailing machine, advancing the slip through the rubber tube. For each operation, that machine will develop a vacuum equal to about 15 inches of mercury. It is not necessary to hang your slip in the air, it will pump it quite a distance. With this machine, five or eight pounds pressure makes the best speed. If we want to go to a great speed we get up a 40-pound pressure. You can get the idea from this of the slip traveling over the ware. The control of the colors is very simple.

Mr. Dunwody: In putting a light slip on a dark body, do you have trouble in chipping?

Mr. Gates: We do more the other way, put a dark slip on a light body. We don't have a great deal of trouble.

Mr. Randall: Brickmakers in applying the slip would not have to adjust the slips as carefully to the body as do the terra cotta makers. Knowing the temperature at which your brick burn you could make the slip accordingly.

Mr. Gates: There is one point in connection with that, which would be of advantage to the brick man. You can make your slip practically vitreous. If you make your brick vitreous it makes a bad brick to set in the wall. If you put the vitreous coating on the surface you can have a flat body in the back, and you won't have any trouble. The old terra cotta red is absolutely vitreous.

Mr. Sibley: Would you have to handle dry press brick to apply the slip?

Mr. Gates: I am sorry I do not know more about the brick business. I do not know what operations you have to go through.

Mr. Sibley: Could you handle the brick on the truck?

Mr. Gates: Yes, you could put it right on the truck.

Mr. Sibley: It would not be necessary to dry them first?

Mr. Gates: No.

Mr. Dunwody: This is a very interesting subject. We are not interested in a uniform color as the terra cotta man is. As I said a while ago we made some brick like this sometime ago. They were made the same way except Mr. Gates has a better machine for applying the slip. We had a very crude way of applying the slip.

George A. Perry, Boston, Mass.: How about the durability of the color? For instance, in our brick we have tried to substitute a glaze in our water struck brick. The architect has objected to it because the glaze was not durable.

Mr. Gates: That would be a question of durability of the brick. Of course, we say in terra cotta, and terra cotta manufacturers throughout the country, that we have the most durable material there is.

Mr. Parry: We find in the East, in our climate, a glazed material will not stand.

Mr. Purdy: You will excuse me, Mr. Gates, but I think I can answer some of these questions. The question is asked: Can it be applied? Yes.

It is a thin coating. It is not a glaze, it is a stain. It is a color. It is not thick. It is durable. It will stand as long as brick will stand. It will not craze. It will not chip off.

With the glazed brick, the crazing is not due to shrinkage. It is due to several causes we need not enter into here. If this strain would craze it would not make any difference. It is an iron rust thrown on your brick. It is a good fast color, perfectly practical.

Mr. Hammerschmidt: Will it hurt the brick to handle them after this stuff is put on?

Mr. Purdy: It will not be harmed by handling. The brick can be handled on the truck or in the column. The brick cannot be boxed in as terra cotta. The brick do not have to rest on the colored surface, but on the broad surface, if you are going to set economically as you must in common brick. This will not interfere with the handling. I am not making assertions. These are facts. The new feature here is the machine application, the other, the use of the stain is old. Mr. Gates' manner of application is new, the rest is old, as he will agree.

President Wilson: How about the temperature at which the brick are burned?

Mr. Purdy: There will be no trouble about that, if you put your color into the same clay. If you wish a more dense



George A. Perry, Boston, Mass.

face than you have on your ordinary brick you can get that, but if you carry the vitrification of the brick too far, you will get into trouble. You do not want to vitrify the face. You must know the temperature your clay will stand. Your stain will stand any temperature your clay will stand.

J. Fred Smith: That last column of brick is peeling off; will it chip off?

Mr. Gates: These brick are not burned as they should be, and the proper slip was not put on that particular brick.

Mr. Blair: Then, is that a chip of the slip, or a chip of the brick?

Mr. Gates: A chip of the brick.

Mr. Gregory: I have had some experience along this line in my terra cotta business as well as brick. I have experimented along the same lines and we have had very good results, but you will find different clays will act differently, so don't think you are going home and do the same thing right off without any trouble. The brick on the further end to the left which have been referred to, the slip did not quite fit the brick, and my experience has been that the column of clay if too wet will not absorb the stain. You will not get the same results you will when it is dry. I tried it as the col-

umns came from the brick machine, but the cutter left a mark on the edges. The proper time to apply the stain is after the brick have been cut, but even then you do not get as good results with the brick as you do after the brick are dried and ready for the kiln. They will absorb the stain more readily at that time. We have done that time and time again. I can show you brick that have been used a number of years. Be careful how you make your stain. Mr. Gates is a chemist. You are not going to be able to take just the stain, put it in the water and stir it up in a crude way and get all the results he has gotten. Go at it cautiously and you will get there.

A. H. Sheffield, Chicago, Ill.: My mind goes back a couple of years ago when this machine was first shown the terra cotta men, and it reminds me very much of the story of the old fellow who saw a locomotive for the first time, and said, "My God, you can't start her," and after they got steam up and she started off, he said, "All hell can't stop her." I was interested from the sales end, so I went out to sell the thing. The first year I sold \$20,000 worth of the stuff, it sold itself. Last year we sold \$100,000 worth. At first, there was difficulties to make the slip fit the body, see it was run through the tubes properly, see it was applied properly, but these were matters of detail. I don't know anything about the brick business, but I do know the man who made the machine,



Wm. Hammerschmidt, Lombard, Ill.

and I know the machine. It is like the human hand. I noted everything Mr. Purdy said about the slip. I talked with Mr. Frost of Los Angeles. He had a machine spraying terra cotta and he sprayed a few thousand brick and threw them aside. An architect was out at the plant and saw the brick and said, what are those? He took those brick, and since then Mr. Frost has been busy making these brick. How they are made I do not know. That is not my business, but this will increase your production and increase your profits, and increase your sales. Mr. Gates did not come here today to explain to you the methods by which this may be done. He is not a brick man, but he came to show you some results he had obtained in terra cotta, which Mr. Randall thought might be applicable to brick. They sent a few green brick out to our Indianapolis factory. The results you have here. It is no more a finished result than the first pulsichrome sample of terra cotta they handed to me, and I said, "My God, what is it?" Now, eighty-five per cent of our work comes specified pulsichrome. It was like the locomotive, when it first came we didn't know how to start it, then when we got it started we didn't know how to stop it, but our hand is on the throttle now and we know just how to handle it. (Applause.)

Mr. Steadman: Some asked about making the slip fit the

brick. It is simply a question of adapting the slip to the same heat as the brick. The trouble is trying to put a high grade enamel on a low grade brick.

W. C. Mitchell: I would like to ask Mr. Gates if some particular clays high in pyrite minerals, would not this slip have a tendency to peel off, if not mixed with metallic oxide or something of that sort?

Mr. Gates: I might cite a little experience we had at the beginning of the war. Barium of carbonate was very hard to get and the enamel of terra cotta is sometimes hard to hold if we have any salts. We had to make terra cotta without that barium of carbonate. We scraped off the salt and put the enamel on when the terra cotta was dry.

Mr. Purdy: If you will let your brick get dry and the scum comes out like salt on the surface, you cannot put that stain on the surface; if you put the salt on the surface, the scum will come through it. The stain should be put on in the green state.

Mr. Dunwody: Were those brick brushed off before the stain was applied?

Mr. Gates: I think they were, because we brush off every bit of terra cotta.

Mr. Dunwody: Where can one get these machines?

Mr. Gates: There are about thirty of these machines in operation at the present time. We manufacture the machine and lease it.

Mr. Penfield: We made many years ago a great many brick treated in the same general fashion, a slip applied the same as Mr. Gregory has referred to, and the brick that had already been dried worked better than when applied to the green brick. We used to use yellow ochre. Our clay did not burn a very good red, not as deep as we wanted it, and we used to put yellow ochre with water, applied with a spray, applying a gentle stream, allowing the mixture to be sprayed on the brick by the force of the stream. This water and yellow ochre applied with the heat of the steam entered the surface of the brick enough so the ochre took hold of the clay in the brick and became a part of it, so when it was burned it was durable, a perfectly durable proposition. Those brick have some of them been in use for thirty years. So the application of this stain is a perfectly practical proposition, and I think has a lot of merit. It would certainly give a beautiful effect in the wall. I think there is certainly a very good field for something of this kind. Those brick there Mr. Gates says were produced in a muffle kiln. Of course all of these details would have to be worked out to find how best to burn them. We burned ours face to face and they came out perfectly fine and the color was good. We did not consider that a glaze. We put some coloring matter in the brick and burned them.

Mr. Purdy: Twenty-five years ago they wanted Harvard brick and a good many of the Hudson River brick men dug up their yards to get black brick. E. E. Gorton having had terra cotta experience went down and produced in scove kilns a high class of black heads. These brick that you see here, were burned in a muffle kiln because they don't use anything else out there. These black heads of Gorton's were burned in common scove kilns, they can burn black heads, or red heads or white heads.

Secretary Randall: If Mr. Purdy can tell us how to grow hair on bald heads, he will confer a favor on some of us (Laughter.) I move, Mr. President, we tender Mr. Gates the thanks of this Association for his demonstration. He is a worthy son of a noble father, and we are glad to have him actively with us.

John W. Sibley: I second the motion.

Carried.

President Wilson: I would like to ask Mr. Purdy if there

would be any objection to setting brick sprayed as these brick face to face?

Mr. Purdy: That stain is nothing but what you have in your hard brick. You can set them any way you like.

Mr. Wilson: Better set them face to face. When we want to get a straight shade we set them face to face.

Mr. Purdy: The greatest thing is you are getting a stronger, better brick without adding much to the cost.

President Wilson: The question is if you can keep your cost down to anything like we can produce now. Any way you can get a variety of colors would be the best thing that could happen to the face brick business. People no more want an exact shade. Architects are beginning to want as many varieties of colors as you can give them. The only objection we ever have with our face brick is you don't have wide enough range of colors, so most brickmakers are delighted at the thought of selling their brick, everybody is selling tapestry brick, and we get about as many different colors as you see here naturally, and the question to my mind is whether you can do it as cheaply as you can out of natural shale. Mr. Jotham Post was to have led in the discussion of this paper, but it has led itself.

Mr. Post: My brick are so small you can hardly see them. We burn our kilns out in about four days and three nights, water smoke and all. Mr. Blair and Mr. Randall were out at my plant one time and Mr. Blair said how high do you set your brick, and I told him from thirty to forty. He took a ladder and went up to the top, and said, "They are hard all right," and threw some down to Mr. Randall. Mr. Blair said, "If I go back home and tell them you are burning your brick, water smoking and all in 36 to 48 hours, they would think I was stretching it"

R. O. Clark, Berlin, Conn.: I have here a picture of a house at Berlin, Conn., built of brick burned in a common up draft kiln, and we have all of the colors in that building you have there. We did not put anything on the brick. They are common sand struck brick burned in five days and five nights. Of course this don't happen every time.

Secretary Randall: If the brick men go into this thing and haven't a good chemist near, they can send a sample of the clay to whoever is going to furnish the stain and can get them to adapt the stain to their own particular clay all right. This is a detail that will be easy to work out. You are not going to have to establish a laboratory on every plant. Are we ready to pass to the next, Mr. President?

President Wilson: This has been most interesting. If there is nothing more on this question, we will take up the next, "Engineering as Practically Applied to the Brick and Tile Industries," by Frank D. Chase, Chicago, Ill.

ENGINEERING AS PRACTICALLY APPLIED TO THE BRICK AND TILE INDUSTRIES.

By Frank D. Chase.

Mr. President and Gentlemen of the Convention:

Some years ago the Chicago papers accused me of being an incendiary, specifically, of setting fire to buildings on the Chicago Lake Front.

The charge was a true one, as I was obliged to admit, and I received a good deal of criticism and some anonymous letters, one which I have treasured as a curiosity—and as a testimony to my standing in my profession, (which is not incendiarism) for it was a threat against my continued well-being.

The occasion of my act, which was witnessed by several thousand people—was the burning of two cottages, one of wood and the other of brick construction, to demonstrate the superiority of brick as a building material.

I have always believed in the liberal use of brick, and it is a very great pleasure to meet and speak to all the real brick makers of the country, here assembled.

I'm not here because I like to hear myself talk, but because I'm an enthusiastic believer in engineering and I never miss an opportunity to say a word for, or to advertise, if you please, the engineering profession.

A man who had always scoffed at advertising finally admitted to a friend one day that he was convinced that advertising brought results—his friend asked him what had happened to change his mind. He replied that he had recently advertised one morning for a night watchman, and that night his store had been robbed.

I've been doing engineering work for 25 years and I am grateful for the daily increasing recognition of the engineer. When mentioning that I'm an engineer, I'm no longer asked as to whether I run a stationary engine or a locomotive.

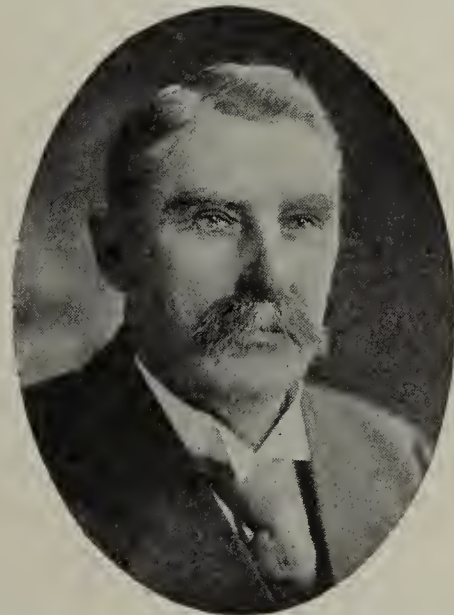
In speaking of engineering, I speak as an expert. My authority for that statement is an introduction given me by a Chairman of a Manufacturers meeting in Des Moines, recently—I was made quite proud by his statements to that effect, until he again made it, with the further explanation, for the benefit of those who did not know—that an expert was a man away from home.

As I feel very much at home in Indianapolis, I shall not claim to be an expert. I'd rather talk about engineering as applied to brick manufacturing than brick manufacturing as applied to engineering.

You may remember the man who told his wife he was going to deliver an address on the Arctic Ocean—she said "You don't know anything about the Arctic Ocean"—"Well," he replied, "neither does my audience."

I shall reverse this and play safe by not talking about the subject of which my audience knows more than I do. While I have not attended your convention I am a brick-man if there ever was one and my files contain nearly all of your annual conventions reports.

I had really intended to get very technical, until I chanced on a



Ex-President J. W. Robb, Clinton, Ind.

statement—in your 1887 proceedings—that "no facts and figures should be given, the convention would not listen to them."

Seriously speaking, however, I know of no association meetings where more real constructive work is done than at the meetings of the N. B. M. A.

Not only have you the splendid articles on the practical phases of manufacturing, but you have the technical and engineering papers which deal with the chemistry and technology of clay products. You have not only told the world to "Build with Brick"—but you have shown them how. One valuable thing which means millions of dollars saved to this country annually, you can assist through your willingness to co-operate with the National Fire Protection Association, and its able leader, Mr. Franklin Wentworth of Boston.

The engineering work of the N. F. P. A. which Prof. Woolson directs largely, is a benefit to the brick manufacturer in so far as brick should be used.

The old order of things has passed away and industrial America today is at the threshold of a new era of domestic and world commerce and competition.

The war speeded up all industry and the engineer was called upon, by warfare, to develop new processes, new materials, new products, to utilize waste, to conserve labor and all industry has benefitted thereby. Perhaps the only item on the credit side of the war, and the price was a terribly high one, is the increase in the knowledge of the arts of peace, gained in war.

Every industry was benefitted by the speed and progress inspired by the war, and those individuals who have refused to keep up this pace and keep up the date, will be lost in the dust of their more progressive competitors.

Familiar as I am with many industries, I know of none where

more progress is being manifest than in the manufacture of brick.

Not many years ago men and mules were most in evidence in the "brick yard." Today the modern brick manufacturing plant is well laid out, well equipped and well operated, and it is the ambition of every manufacturer to say this of his plant.

It is said that there is nothing new under the sun—and I certainly shall say nothing that is startling or original—in fact, it all sounds quite obvious as I say it, but very few plants will measure up 100 per cent on a check of every item, and we all will think of examples where the sensible thing to do was not done. These things must be thought of in a logical and comprehensive way, if a plant, new or old, is to succeed.

Here enters the Engineer.

The problems of the beginning or continuation of the modern plant number four:

1. Location.
2. Layout.
3. Design.
4. Operation.

LOCATION is the first consideration and its factors are:

- a. Market.
- b. Raw Materials.
- c. Transportation.
- d. Labor.
- e. Fuel, Water and Power.
- f. Site.

Reviewing these briefly we have:

First, Market—To determine what the market is, means a survey of demand and supply. Demand being the amount and kind of building operations. In a district where frame houses are the rule, due to a low cost of wood, supplemented by a supply of cheap building stone, brick will not be as much in demand, as where timber and stone are expensive. Brick for pavements must compete with cement. The consumption of the product, and its future possibilities must be analyzed, together with existing supply. The last place in which to locate is in a community supplied by a sufficiency of modern efficient plants. Chicago, for example, is a community which, while its demand for brick is enormous and still growing, is too well served by the modern plants of the Illinois Brick Company and others to encourage the investor. And, too I know, for I have heard Mr. Schlake say so many times, that no one makes any money making brick in Chicago. I've been tempted many times to use materials other than brick just to save losses for Mr. Schlake's Company.

Conversely nothing is so attractive to the investor as a community which is supplied only by plants which are not sufficiently modern to meet new plant competition. I know of several communities which have been selected as sites of new plant, because competition is not feared.

Having determined a market through careful analysis the next item (b) Raw Materials—must be reviewed. Clay or shale must be located—and intelligently located, sounded, and tested. This means proper borings by an engineer who knows the geology of the district, and can interpret it for the brick manufacturer. Suffice it to say that millions of dollars have been wasted that might have been saved by the expenditure of a few thousands for engineering in analyzing and testing raw materials. In no other fashion is it possible to determine what the character of the finished products will be; the kind of raw material found will enable one to determine exactly the ware to be manufactured. In fact, a definite knowledge of the raw materials may permit a much broader scope of manufacturing if definitely known, making larger profits possible. Possibilities in this direction are too numerous and too obvious to mention. The quantity is as essential as the quality and many a plant has been prematurely abandoned because of an unforeseen exhaustion of the supply. You must know as surely as it may be determined, that you have the proper materials in quality and quantity before you consider their manufacture, and not only is the primary object of locations affected but, too the later consideration of proper equipment. The kind of material must be known to a certainty, if proper equipment is to be bought.

(c) Transportation is the third location consideration. The zone of profitable distribution is easily determined and the market within that zone can be estimated. Because of the ratio of freight to total cost of brick, it is a more important factor than in many industries. Many seaboard manufacturing plants are today struggling unsuccessfully against high freight rates to a western market. The brick manufacturer must know that he can market his product at a profit. This means not only railroads, but the right railroads and the selection is not always dependent on freight rates.

(d) Labor—The fourth factor is not as important as at one time because of its decrease due to the installation of modern equipment and in most communities there is labor to be had.

The silk mill and foundry operate in our large cities, but the location of each must take into account the supply of the right kind of labor.

(e) Fuel, water and power must be provided, and at all costs which will not be prohibitive.

I could talk for an hour on this subject alone—we know it is often neglected, and more than one plant has been abandoned or put to large expense because of a lack of knowledge of these three things. The right kind of fuel or water is sometimes as serious a problem as power. I have read in your transactions many able papers, presented to this association on these subjects. The analysis of fuel, water and power supply and requirements is a very technical one.

(f) Site. The last of the location factors, includes many of the others, before mentioned, for they must be satisfied in the site. That is, the market must be reached at the proper cost, by proper transportation, of the right kind of raw materials, and handled with plentiful and cheap labor. Beyond this, the site must permit of the layout of the modern plant—with adequate areas for the initial requirements of clay storage, driers and kilns, machine house, power plant, ware storage and shipping—and for the expansion of these units to meet future requirements.

Plant location then, is the subject of a broad comprehensive engineering analysis, which must be made, and well made to insure that this first step is rightly taken.

Layout and Design.

The layout of the plant, as distinguished from its design, is a production problem, i. e., the problem of manufacturing brick at the lowest cost. In my work, I find that the study involved in the analysis of location and layout is frequently as involved as that of design of structures and equipment.

The proper layout of poorly designed structures and equipment and the poor layout of well designed and built structures and equipment are equally inexcusable—and therefore the proper layout of well designed and built structures may be considered briefly as a single subject. This problem, in the new plant, is usually simpler than in the old, for there is seldom the handicap of the existing structures to contend with.

But, new or old, the plant presents ten thousand opportunities for skill, ingenuity and last but emphatically not least, common sense, on the part of an engineer.

Plant layout involves as we all know:

- 1st. Mining and storage of raw materials.
- 2nd. Handling of raw material to the first machine, be it pan, granulator or pug mill.
- 3rd. Machine room operation.
- 4th. Drying.
- 5th. Burning.
- 6th. Storage and shipping.

Any analysis of these would be out of the question and beside the question—but I'm going to hit a few high spots as the engineer sees them, with a little recent help from the outside.

The mining and storage of raw materials and its delivery involves methods and equipment which are in themselves a big industry. The steam shovel, alone, as one of equipment, has many types, each one adapted to a particular soil or excavation problem. The handling of material to storage involves not only equipment, but power problems.

Storage, now becoming a necessity to reduce carrying of stocks and improve condition of the material, involves a different kind of material handling problem. There are many ways of solving this, depending on time, amount, and location of the stock pile.

Machine room operation involves not only proper equipment and its proper maintenance, but the proper supply.

Drying involves proper insulation and reduction of heat losses as does burning. Professor Bleininger of the United States Bureau of Standards, has made tests which roughly figured a loss of 75 per cent of the fuel value in burning. Instead of \$2 or \$3 assume a loss as little as 50 cents, and in a 100,000 capacity plant that is over \$18,000 per year, which will buy considerable insulation. How many brick plants are using modern methods of insulating, dryers and kilns?

Utilization of waste heat goes hand in hand with insulation as a cost reducer and few people know anything about the subject. And all through the plant are involved the problems of conveying or transportation of materials.

A recent supplement of one of your trade papers describes the remodeling of the plant of the Bradford (Pennsylvania) Brick and Tile Company—and says editorially what I might personally hesitate to say, that "The story is one that could just as well apply to nine out of ten other clay plants where the management has the vision, courage, ambition and good business sense equal to W. L. Hanley, Jr., the Manager." "There is need in the clay industry for a great deal of junking of obsolete and worn out inefficient equip-



N. B. M. A. Smokerette in the Riley Room, Claypool Hotel, Wednesday Evening, January 25, Taken Before
Many of the Guests Had Arrived.

ment and the rebuilding of factories to permit lower production costs." "Reduction in production costs is the cry of the present industrial period." "However, there are too many plant owners who are under a misapprehension and who feel that because their plant is an old one and not constructed along modern lines, or because its layout is not the best, that they cannot consider the matter of remodeling their factory and installing cost saving equipment," and the last line of the heading reads, "All net a remarkable reduction in production cost of over seven dollars a thousand." Mr. Hanley was an engineer as well as a brick manufacturer and he did among other things, what every engineer does and in fact his opportunity and ability to do so are his biggest asset; he borrowed ideas from other industries.

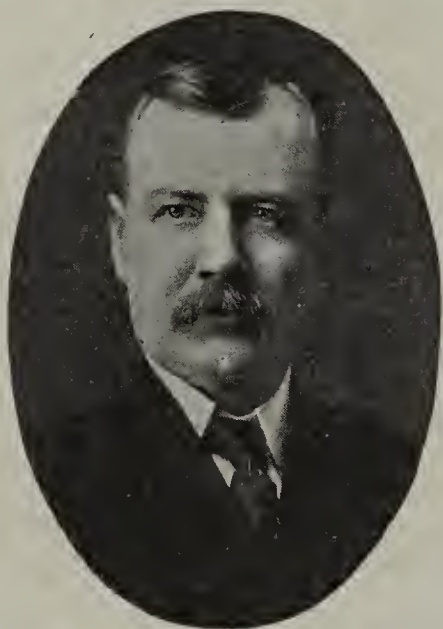
Last summer we designed a model sausage factory, and we designed a sausage drier which has been extensively commented upon, which prolonged the saleable life of sausage just 100 per cent—the engineer who did this had never seen sausage made, but he knew how to make brick and his brick drying experience enabled him to design a good sausage dryer.

A large ice cream plant had a deficit of \$300,000.00 in 1920—this we turned into a like profit in 1921, by the knowledge of our refrigeration engineer who had never designed an ice cream plant.

The conveying equipment of the shell plants and the material handling of the ship yards which we designed during the war were easy problems, because of our knowledge of equipment used in other industries. There is no equipment in any kind of a plant that gives more trouble than conveying equipment. There is a reason for this which I shall mention presently.

Examples of this sort could be multiplied.

An engineering organization with 400 or 500 years total ag-



J. F. Reynolds, North Haven, Conn.

gregate experience in many plants in many lines of industry borrows successfully from one industry to serve another. Other points of interest mentioned in the Bradford plant description include increase of No. 1 ware from 60 to 95 per cent of output.

I'll say that there is not one plant out of ten in the brick industry or any other industry in this country, with the possible exception of the steel and textile industries, which have the advantage of many years of development and concentration of large capital, where capacity could not be increased and pay 50 per cent earnings annually on the capital invested in such improvements. This statement is based on a personal knowledge of hundreds of plants of all kinds.

Scrapping of equipment is a thing which most manufacturers hesitate over. Scrapping equipment is justified for two reasons only. First, because it is worn out and this often means that, as in the case of dies, etc., delay to replace increases cost of production and this can easily be determined. Second, because it is obsolete. The use of old vs. new equipment can be very accurately determined if one wishes to take the trouble and time to get the facts. Mining, excavation, storage, burning, drying, conveying, insulation, power and power transmission, mixing, grinding, transportation, all are subjects of years of study and too, of recent engineering standardization and must be passed over for a closing word.

The article describing the Bradford plant closed with a list of firms supplying principal equipment for the plant. The list numbered 43 names with a lot of equipment not selected.

Mr. Hanley was, as I've said, an engineer and he dealt with these 43.

The owner of a plant in Illinois told me recently he never made any money until he got an engineer, for a son-in-law. This young man helped him rebuild and modernize his plant. What I've been leading up to, and submitting proof to substantiate is this, that you can't economically lay out a modern successful low cost and low production cost plant without an engineer. It is a splendid thing to raise one—then you have him in the family—almost as good a way would be to obtain one by marriage and if you can't do either, hire one—to work with you—work with you I said, not for you—for an engineer can only succeed when he and his client make a team. The engineer does not supplant, he merely supplements his client's experience and knowledge. But—and here is where I'm going to get in bad for a moment—he does supplant the equipment manufacturer.

For many years the equipment manufacturer has furnished the information for plant layout and design and incidentally and logically has included his own equipment. That has been entirely and absolutely legitimate. The modern plant is no longer the simple thing of 20 years ago—Mr. Hanley dealt with 43 manufacturers—which one of the 43 would you go today, for your complete layout.

Do not misunderstand me. The present advanced state of the art of clayworking is due primarily to the manufacturers of equipment and they deserve much of the credit. They have built the machines, the kilns, the dryers, the equipment to meet your requirements, and it was their knowledge of what the other fellow had done, that enabled them to help you. Many times have they stood the cost of their failures to meet your requirements, but they stuck, and the perfected equipment you use today is the result of their investments in time, money and effort.

Things have, however, gotten a bit too complex—and I find it not only interesting and gratifying, but of very great justification and help to receive, in the clayworking field as in other industries, the cordial co-operation of the equipment manufacturer.

The modern spirit of salesmanship and service prevents the selling of equipment that will not function perfectly and the manufacturer welcomes anyone who can co-ordinate all of the plant layout and equipment problems so that he will know that his equipment will fit into the general plan.

Another thing, when it comes to dealing with 43 makers of equipment and analyzing all of the details which go to make up each line which is figured on, one finds a long list of gaps, overlaps and misfits. Some of these are discovered just about the time the plant is ready to operate. It is the province of the engineer to reduce each separate line to be purchased to a clear cut plan and specification: (Let me illustrate, powdered coal, fuel oil, conveying equipment).

This puts all competitors on the same basis which permits of intelligent comparison of all bids, and letting of contracts. A thing welcomed by the honest manufacturer. There is an obligation on the other side, too. The manufacturer who buys on price alone, seldom buys wisely, nor does he who tries to beat the manufacturers by sharp practices. The engineer who receives any commission from others than his client is a crook, impure and simple. Fortunately he is a rare bird these days—ought to be a jail bird—and his species is getting very scarce. There is not much room left in this country, nor much chance for success, for crooks. (Applause.)

The parties to a successful plant are three—the manufacturer, the equipment man and the engineer, with the co-operation between all.

I'll repeat what I said at the start, that I've said nothing original—but I know that the complete and logical analysis of your plants, by the engineer, as above outlined leads to successful—i. e., profitable manufacturing. (Applause.)

President Wilson: You can tell by the very close attention given Mr. Chase that this is a very important question. We have a few minutes' time before we adjourn—we are like the fellows who work on the brickyard, we like to quit on time. Mr. I. M. Justice is to lead the discussion of this paper.

Secretary Randall: Mr. Justice is here. I saw him in the room just a little while ago, but he may have been called out.

Julius Lucktenberg, Zanesville, Ohio: It has occurred to me the paper read is so valuable it would be advisable to put it in print in pamphlet form.

President Wilson: It will be printed in full in *The Clay-Worker* and I believe that will answer every purpose until

it is published in the proceedings in book form. You see I preached economy yesterday and perhaps we can practice it in this instance. What is the next, Mr. Secretary?

Secretary Randall: We have something that is not given on the printed program. Mr. H. G. Hall, representing the Bristol Company, manufacturers of pyrometers is here, and has with him a moving picture film which he thinks will be of interest to the convention. With your permission, gentlemen, he will speak to you on a subject he thinks will be of great interest to you.

President Wilson: Come forward, Mr. Hall.

**"AUTOMATIC COMPENSATION OF THERMO COUPLES
AND HOW IT EFFECTS RESULTS ON
A BRICK PLANT."**

H. G. Hall, Chicago, Ill.

Mr. President and Gentlemen of the National Brick Manufacturers' Convention: I have a message for every one interested in getting the best results. This film I want to show is really an experiment in one of the fundamental things you get from the results or use of your pyrometers. You have all

1800. This automatic cold junction compensater eliminates that entirely. We carry the cold end right through to the instrument instead of having it sticking out on the outside of the kiln.

I am going to ask the operator to put on the film, but before he does, I may say this film is a physic experiment which shows the variation of the temperature of the cold end from a temperature of 32 degrees, freezing, and also about 132 degrees, and shows you how much the pointer varies on the small scales. It also shows you these things in getting a correct temperature during the early part of your burn. Of course you do not have to use this arrangement we have, but this is the most simple and most practical. There is nothing to look after. Once you have it on, it is always on and it always functions. We have not furnished this to many brick men for brick kilns, but we have it in use in many other industries.

(Mr. Hall then showed a moving picture demonstrating the apparatus discussed.)

President Wilson: I think this has all been very interest-



Early Arrivals at the N. B. M. A. Convention. Left to Right—Theodore A. Randall, W. E. Dunwody, John W. Sibley, Will P. Blair, Thomas E. Wilson, W. W. Dickinson, George J. Potts, Robert Elliott, Jr., H. Wisrching.

been fed up on pyrometers and how much they will save you and all those things, but the point I want to make with you and the message we have is one of the errors with nearly every pyrometer and which we have completely overcome. We have about a dozen slides to show as an introduction to the film, but some of them were broken and it is impossible to show part without showing all of them, so I have left the slides out.

The fundamental principle of the pyrometer is this, you have two different kind of metal welded together, and that these metals heated on the end produces an electric motive force that is carried through to the galvanometer which indicates or records the temperature you have at the point where the metals rest in the kiln. Of course outside your kiln, the cold end, the temperature is bound to vary in summer and winter so you get a variation in the reading. The device we have to show on the screen entirely eliminates that. Suppose you are reading at 1800 Fahr., and the temperature outside the kiln was 75 degrees, you would get a correct reading. But suppose the temperature varies and the temperature still reading 1800, you would have the difference between 175 and 25, or 50 degrees variance, the correct reading would be 1750, although the pointer on the instrument would still be reading

ing. If any one has any questions to ask, now is the time. I will now announce the

Committee on Resolutions.

Julius Lucktenberg, Ohio.
William Burgess, Toronto, Ont., Canada.
L. L. Richardson, Kentucky.
Harry Clippert, Michigan.
L. E. Walrath, New York.
F. C. Ervin, Colorado.
J. Stocke, Jr., Missouri.
E. H. Rodgers, Texas.
E. B. Merry, Ga.
L. P. Isaacs, W. Va.
J. F. Reynolds, Conn.
D. F. Bunting, Indiana.

Mr. Lucktenbergs requests that the members of the committee meet him up here in front at the close of this session. Mr. Secretary, have you any announcements to make?

Secretary Randall: The representatives of the railroad are here and can give those going on to St. Louis such information relative to trains, etc., as they may desire, and make arrangements for special sleeper. I see Mr. Ralph Stod-

dard, secretary of The Common Brick Manufacturers' Association, is in the room. Perhaps he has something he would like to say.

Ralph P. Stoddard: I believe I have nothing special to say. If any of you going to St. Louis have not yet made your hotel reservations, I will be glad to help them. I will be here today and tomorrow.

President Wilson: We will now stand adjourned, but before you go, I want to tell you, please remember to get back by two o'clock.

THIRD SESSION.

Thursday Afternoon, 2.30 o'clock, January 26, 1922.

President Wilson: Please come to order, gentlemen. The first thing on the afternoon program is a paper, "Expedition in the Cooling of Kilns," by Marion W. Blair, Murphysboro, Ill.

Secretary Randall: Mr. Marion Blair is not here, but he has sent his paper, and there is one slide. We might have his father, Will P. Blair, read the paper for him.

Mr. W. P. Blair: I have asked Mr. Douglas Stevens to read it for me.

time. It has been demonstrated on plant after plant that the firing time can be reduced to six days, the principal thing to determine being just what part of the burn it is possible to put the "hurry up" with a safety to the ware. Time is lost in getting a kiln on fire after the setting is finished. Lack of draft and a disposition to play safe in the absence of definite knowledge and for the same reason a failure to maintain a settling temperature after same has been reached, all accumulate in a year's time to the loss of one or more possible burns from each kiln. Few plants have escaped loss of production on account of hot kilns. Among all the causes of delayed operation, I believe "lack of kiln room" takes the palm.

While there is still some doubt about how fast a clay may be heated up without injury and methods of firing vary, there is no doubt whatever that the only way to cool a kiln quickly is by circulation of air through the ware. There is also little doubt that once 1000 degrees or less is reached, the danger of cracking from rapid cooling is passed. After the waste heat has been taken off there usually remains a volume of heat at from 600 degrees to 800 degrees in the top of the kiln, which is of not much benefit in the dryer but entirely too hot for comfortable working. The crown and quarter holes offer but slow escape for this heat and it usually requires two or three days to get rid of it.

As long ago as fifteen years there was in use on a certain plant a portable fan outfit for watersmoking the compartments of a chambered type or continuous kiln which was short of draft. The general utility of this idea was evidently lost for just recently there has come onto the market a portable fan outfit driven by either electric motor or gasoline engine. This outfit



Harrison F. Clippert, Detroit, Mich.



Marion W. Blair, Murphysboro, Ill.



George M. Krick, Decatur, Ind.

Secretary Randall: I think it is a good thing to press our Third Vice-President into service.

EXPEDITION IN COOLING KILNS.

Marion W. Blair, Murphysboro, Ill.

Mr. President and Gentlemen of the Convention:

Not long ago a butcher shop opened for business on a side street in a certain Illinois town. A traffic census had shown 235 persons per hour passing the location. The customer turnover the first two weeks was little more than 11,000 or slightly more than the town's entire population. Price and quality attracted the custom but the price was possible only because the business was based on three prime requisites of sound merchandising, i. e., minimum waste, quick turnover and small profit. It may be a far cry from a butcher shop in Egypt to the average brick plant but the lesson to be gained may perhaps be clearer because of the difference in waste, turnover and profit.

It is the third item that of "turnover" which I propose to consider in this paper. If the railroad tunnel kiln becomes an important factor in the present day plant, it will be because of the turnover it accomplishes rather than the labor, fuel or investment that it saves.

The average worth of a 30-ft. round draft kiln is probably \$3,000.00 and produces for the plant 250 tons of face, common or paving brick per burn. On a ten kiln plant one extra burn per kiln per year would mean an increased production of 2,500 tons.

Allowing 8 days on fire, 6 days to cool, 2 days to empty and 2 days to set, is a total of 18 days per burn or 20 burns per year if kept in continuous operation. A decrease of one day in any one of the operations would allow an extra burn in a year's

will save from two to three days in cooling a kiln. Six hundred or more degrees can be handled through the fan and work of drawing can be started with 300 or more degrees showing on the pyrometer. The outfit costs less than \$500.00. Interest, depreciation and operation amounts to about \$800.00 per year. As one day's saving per kiln means 2500 tons increased kiln capacity or a possible net income of around \$2,500, this is one of the little investments from which it is possible to receive a large return.

The same fan can of course be used to watersmoke the kiln when draft is short, effecting a saving in burning time. Night crews can be used to advantage both in setting and drawing. Usually when increased capacity is required in the brick business, the first thought is another plant rather than continuous operation. Such a policy has sharpened competition, increased overhead and almost eliminated profit. It has always been a source of wonder to the writer that almost the entire investment of the brick industry should be idle from 14 to 16 hours of the twenty-four. No other major industry can afford such extravagance. (Applause).

Discussion.

Secretary Randall: You will see by the slide that the cooling device is a fan attached to the kiln. You can see one in use out at the plant of the Indianapolis Terra Cotta Company. Mr. George H. Lacey, of that company, was to lead this discussion. He is the man who burned those stained brick for us. He has had quite an extended experience in cooling kilns artificially with forced draft. By that means they shorten the time of cooling from one to two or three

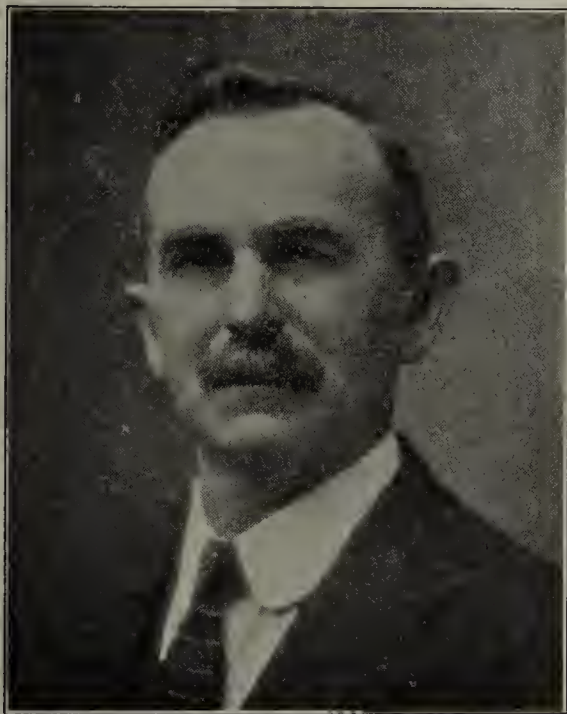
days. They use down draft kilns, but the same thing is applicable with other kilns as Mr. Blair tells in his paper. As soon as the fires reach a maximum heat, they start the fans, and that draws the heat out much more quickly than ordinarily.

Mr. Stevens: Where is the fan attached?

Mr. Randall: I think at the top.

Mr. Stevens: A concern in Chicago puts out a portable fan and blower all on one shaft, mounted on a little truck. It can be moved around from one kiln to another. I have seen this in operation at the plant of the Danville Brick Company. They are using it for forced draft for creating pressure in the fire box. It could also be used in exhausting the hot gases as Mr. Blair suggests. It can also be attached to a small gasoline engine. The gasoline engine, however, will let you in for a lot of grief. It will take one man's time to take care of the thing. However, if you can use an electric motor, it becomes very practical.

Mr. Chambers. Why not attach it to a "tin Lizzie?" (Laughter.)



George M. Fries, Connersville, Ind.

President Wilson: We have with us today, Mr. George M. Fries, President of the Indiana Drain Tile Association, and as the next number on the program is "The Handling of Limey and Wet Clay in the Manufacture of Drain Tile," I am going to turn the gavel over to Mr. Fries while this paper is being discussed, and in fact, as long as he wishes to preside. Gentlemen, allow me to present Mr. George Fries of Connersville, Ind. (Applause.)

MR. GEORGE FRIES TAKES THE GAVEL.

Chairman Fries: Mr. President and Gentlemen, I feel highly honored to be called upon to preside at this meeting this afternoon. I think it was very thoughtful of the National Brick Manufacturers' Association to set aside this afternoon for the drain tile men, and as we are having our quarterly meeting here today we appreciate this courtesy. I thank you, Mr. President, for calling upon me to preside at this time. We will now proceed with the program, and hear the paper by Mr. Krick.

Secretary Randall: Before Mr. Krick speaks, I want to tell you he is an old time faithful member of the National Brick Manufacturers' Association, rarely ever misses a meeting, but this is the first time we have ever been able to get him on the program.

WORKING A WET LIMEY CLAY.

George M. Krick, Decatur, Ind.

Mr. President and Gentlemen of the Convention:

Not every district is blessed by nature with material which man may use in the construction of building up of his community. In the mountainous countries we find the shale and fire clay without trouble of sufficient quality to manufacture any material in the heavy clay ware. But, the Northeastern part of Indiana does not possess either of these materials, whose fields and meadows do not furnish even the boulders necessary for the pavements of its cities or village's side walks. This territory being at a distance from 150 to 200 miles from a good clay deposit and the demand for drain tile and hollow building and silo blocks has caused the construction of several clay plants to supply the demand for this ware, as the selling price of this ware would not permit cost of long shipments.

In this district there are nothing but glacial clays contaminated with sand, gravel, hard pan and lime, and the greatest difficulty encountered in the manufacturing ware from this clay is the lime stone pebbles, which all of these clays contain. In order to remove this objection the only thing was to grind the lime stone to a very fine state to not allow any of the pebbles to exist that would cause any eruption on the finished ware.

Methods of doing this were as follows:

1. Remove the moisture.
2. Pulverize and screen the clay.

Illustration No. 1—

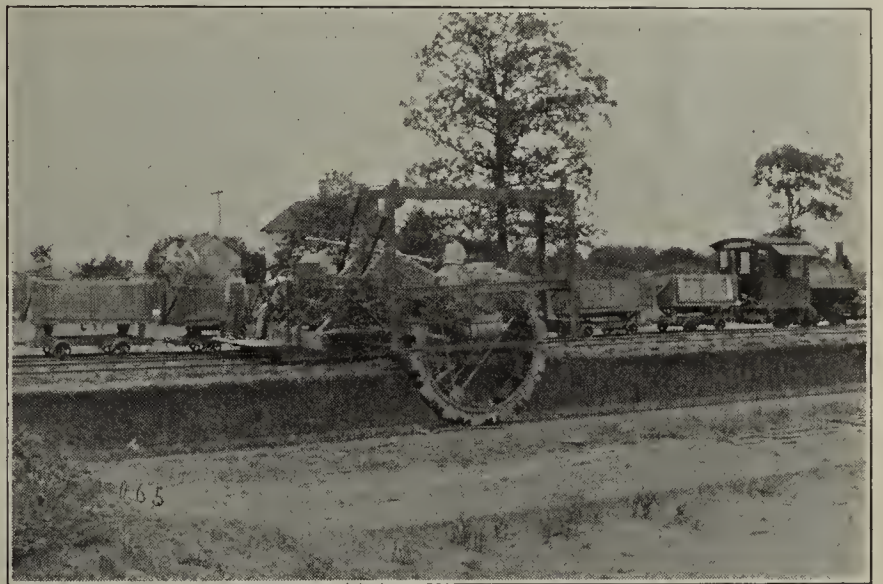


Figure 1.

Clay Bank.

Clay is dug with a clay digger. Advantages of this machine:

1. Thorough mixture of clay.
2. Can be so regulated as to cut very thin layers of clay. The finer the clay the easier it is to dry, almost impossible to dry large chunks.
3. Exposed bank permits the sun and wind to remove a large amount of moisture.

Disadvantages:

1. Requires large amount of track.
2. Too much exposed surface in winter.
3. Extra labor for moving track.
4. Low capacity when digging wet clay. Clay is taken to factory in two and one-half-yard steel cars.

Illustration No. 2—

Clay preparation and storage building:

1. The clay is dried and pulverized.
2. It is screened and stored. These buildings are constructed from hollow building tile. Building No. 1, grinding room; No. 2, clay storage. This building is 204 feet in length, 30 feet wide, walls constructed of hollow tile; 7 feet high with a retaining pillar every 12 feet. This building has been loaded to a capacity and does not show any weakness. Building No. 3, screen room. The clay is brought to the grinding room which has a clay feeder, rotary dryer and pulverizer.

Illustration No. 3—

Rotary Dryer.

This dryer is 7 feet in diameter and 70 feet in length and has a capacity of 30 tons per hour.

Objections to Rotary Dryer:

1. Investment.
2. Fuel consumption.
3. Power required.
4. Dust.
5. Extra labor.

Fuel consumption depends on:

- (a) Moisture in clay.
- (b) Condition of clay, fine or coarse. The finer the clay the easier to dry and less fuel and greater capacity.

(c) Fuel depends on the quality and preparation. Egg coal preferred, as it gives a free passage of air. It is not necessary to have a great heat but the passage of a large volume of heated air to pass through the dryer. The fuel also depends greatly upon the personal equation of the fireman.

Cost of fuel to operate this dryer varied from 25 to 50 cents per ton of clay depending upon the conditions.

4. Makes possible to work clays that otherwise could not be used.
5. Gives better mixture of clays.

Grinding.

The clay from the rotary dryer is fed into a ring hammer pulverizer.

Objections to pulverizer:

1. Power.
2. Capacity.
3. Dust.
- (a) Large amount of power in proportion to capacity in tons of clay.
- (b) Great dust agitator pulverizer must be inclosed and dust removed by an exhaust fan.
- (c) Wearing parts must be removed often. High consumption of lubricating oils.

From the pulverizer the clay is elevated to the screens which



Figure 2.



Figure 4.



Figure 3.



Figure 5.

Dust—As the clay in the dryer is being continually agitated and a large volume of air being drawn through creates at the exhaust fan a large quantity of fine dust, which is taken care of by means of a settling chamber and stack as illustrated in Fig. 4. The settling chamber has a capacity four times that of the exhaust fan so that when the air leaves the fan it travels at a much lower velocity, which is a great aid in settling the dust and prevents it from going out into the open.

Note—This stack is constructed from 5x8x12 inch silo blocks, is 85 feet high, reinforced every course with one-fourth inch round wire and plaster with a one-half inch coat of cement on inside.

Power required to operate this dryer under full load is 15 h. p. and 10 h. p. to operate exhaust fan.

Advantages of rotary dryer:

1. Uniform moisture in clay.
2. Lessens cost of grinding.
3. Removes all vegetable matter.

is really the most important equipment where limestone plays an important part.

Two gravity screens are used. Top screen is equipped with an eight mesh wire cloth screen, which removes all the coarse clay and gives greater capacity to the bottom screen. The bottom screen is equipped with a slotted wire screen. The wires are doubled crimped and rolled so that there is no possibility of wires slipping so as to make an inaccurate sizing. Also the process of drawing permits of relatively little ware in screening, has a large discharging surface and for this reason produces a very large capacity. Size of slotted wire screen openings $1/20 \times 1/2$ inch, size of wire .072, surface 72 square feet.

Bleininger in his article in Clay-Worker, August, 1910, "The Function of Lime in Clays," that the greater the percent of lime the finer it had to be ground.

In practice we find this true that the greater percent of lime the finer it must be ground. This plant was so equipped to grind as fine as a 40 mesh.

The objection to fine grinding:

1. Difficulty to carry and store.
2. Cause great columns of dust.
3. Lessen capacity.
4. Dryer and kiln loss.
5. Finished product inferior in quality.
6. Impossible to feed regularly into pugmill by means of disc feeder.

By not working a clay whose contents will not exceed 5 per cent in lime pebbles we have no trouble with lime eruptions to injure the quality or sale of the ware. The higher the contents of lime the finer it must be.

From the storage room the clay is fed automatically on a conveyor, which conveys the clay into bins above the pugmills from which bins the clay is fed into pugmills by disc feeders.

Advantages of storing and ageing this clay:

1. Removes the toughness.
2. Increases capacity in moulding.
3. Less power.
4. Drying time reduced.



Figure 6.



Figure 9.

5. Drying and burning loss reduced.
6. Burning time reduced.
7. Quality of finished ware improved.

(a) The clay is not so tough and sticky, breaks up well and made easy to work in pugmill, making complete homogeneous mixture which is very essential to making hollow ware.

(b) Before this process was installed an average of eight (8) tons of ware an hour on a 44x20 sewer pipe press has been increased to an average of eleven (11) tons per hour.

(c) While the capacity has been increased the operating load remains the same. No improvements or changes of any kind having been made in the power plant, but upon comparing records shows that no more fuel was consumed and by indicating the load shows no increase in h. p.

(d) By having this clay in almost a perfect homogeneous material has decreased the drying time 25 per cent and dry room loss from 5 to 10 per cent to less than 1 per cent.

(e) Average time of burning a 40 foot kiln of 155 tons of ware was 95 hours, has been reduced to 70 hours, making a sav-

ing of about 25 per cent in time, and burning loss has been reduced from 20 per cent less than 10 per cent.

(f) The color of the ware has been somewhat unpopular owing to the lime, but the ware has a good smooth surface and a clean metallic ring when struck with a hammer and will withstand more severe handling.

Illustration No. 5.

North view of the plant which you will note is constructed from clay products.

Illustration No. 6. South view.

Note. Illustration No. 7 was a flow sheet showing different departments, as:

- Part 1. Power building.
- Part 2. Elevator.
- Part 3. Manufacturing building.
- Part 4-5-6. Dry room.
- Part 7. Fan house.
- Part 8. Machine shop.
- Part 9. Garage.
- Part 10. Storage room.
- Part 11. Preparation room.

Illustration No. 8.

Boiler Stack.

Boiler stack is 85 feet high, is constructed out of 4x8x12 inch hollow building tile, is lined on the inside with fire brick for a



Figure 10.

distance of 50 feet. Stack has taken care of three 150 h. p. boilers for the past three years and shows no sign of depreciation.

Illustration No. 9.

One of the large kilns used for burning large ware. The kiln is 42 feet in diameter, has 14 fire boxes, gives very good results.

Illustration No. 10.

View of coal bins.

These bins are constructed from hollow building tile. Are 18 feet in diameter, 28 feet in height and have a capacity of 125 tons. Outside walls are constructed from 5x8x12 inch. silo block reinforced and at every course with a one-half inch square reinforcing bar and plastered on inside of wall with cement and sand one inch thick. These bins have been in constant use for two years and show no depreciation.

Material required for coal silo.

- 2,200 silo block, 5x8x12 inch.
- 690 4x5x12 inch.
- 690 5x8x12 inch.
- 30 barrels of cement.
- 5 barrels of lime.
- 20 tons of sand.
- 1,000 one-half inch reinforcing steel.
- 1,000 one-quarter reinforcing steel.

Silo blocks makes an ideal coal bin cheaper than frame and far more durable. (Applause.)

Discussion.

Chairman Fries: The discussion of this paper was to have been led by Mr. D. C. Haeger, of Aurora, Ill. I understand Mr. Haeger is not in the audience, so I am going to call on Mr. Fred Baum of Sweetser, Ind., to start the discussion. I think he is posted on this subject.

Fred Baum, Sweetser, Ind.: I really feel I am not qualified to discuss this paper because our operations are not along that line, although we are of course interested in the manufacture of a drain tile. I believe I had better leave it to some one better posted along that line of work. I understand it has been done in Mr. Krick's section very successfully.

Chairman Fries: Is there any one in the audience who has had experience along this line who is willing to tell us something about it?

William Hammerschmidt, Lombard, Ill.: We had the same trouble as Mr. Krick. We are located in Northern Illinois and had limestone in our clay. We had our troubles and we changed to the dry clay system, putting in a Penfield disintegrator. We have a large dry house. We dry our clay about six weeks in advance of the time we are going to use it. We run our clay through the disintegrator, which is fed by a conveyor which runs underneath the storage bins and feeds uniform. We take up all the lumps in that way. Our screen is about 8 wires to the inch. The tailings returns to the Williams pulverizer, whereby we increase the capacity of the machine so much more, that we could use a smaller machine. We take out about 50 per cent of the clay at the first screening and by returning to the pulverizer we have a continuous run until everything is pulverized to the fineness of corn meal. We have reduced our time of drying and burning and have better ware. We dry our drain tile on the flat.

Otto Trautwein, Chicago, Ill.: Does Mr. Krick put his clay through the rotary before or after it goes to the storage bin?

Mr. Krick: The clay is brought in and dried before it goes to the storage bin. It is dried and screened and then placed in the storage bin.

Mr. Haupt, Terre Haute, Ind.: I want to ask Mr. Krick if in burning a 42 foot kiln he figured his consumption of coal as the same in proportion to burning a 30 or 33 foot kiln, or did you use less coal? What did you save by the 42 foot kiln?

Mr. Krick: We counted in getting it where we got in a larger tonnage and burned with a slightly less amount of fuel. I could not give you the figures off-hand, but it is something like 5 per cent less fuel, a very small margin in saving of fuel.

R. C. Burton: Does it cost anything more for the upkeep of a kiln of that size?

Mr. Krick: It will run in the same proportion. We burn a 42 foot kiln in 72 hours. At the present time with the schedule we have we aim to turn that kiln once every ten days.

W. C. Hoover, Portland, Ind.: At the Portland Drain Tile Company we got into the lime trouble before Mr. Krick did. Along in 1913 we began to run short of surface clay as we call it, and we could not get any clay near us so we had to shut down. We are making thirty-inch tile at the Portland plant out of hard pan and a surface clay above that. For two years we had more trouble than you can imagine, but we finally got the limestone handled successfully. We had a Williams crusher put in, and we built a large storage bin which helped. Our bank varies from 12 to 15 feet. As Mr. Hammerschmidt says, we have eliminated our losses in the sheds for drying and somewhat in the time of drying

also, but the best thing of all, we improved the quality of our ware very, very much. Mr. Krick is our neighbor and we are very glad he has worked out a success with this kind of clay and we wish him success I am sure. I know we have improved the quality of our ware immensely and can manufacture large quantities in larger sizes than we could before on account of the losses.

W. L. Beltz, Mowrystown, Ohio: I would ask what size mesh he uses, if it runs as high as forty mesh.

Mr. Krick: It varies in my clays. In some places it runs as high as 30 per cent. We have carefully analyzed the amount of lime, we have places where it runs as high as 25 per cent. We stay away from that, we never try to grind that clay. We use as high as 30 or 40 mesh. When you go to that you have a large quantity of clay as fine as 32 mesh, and the moment any wind strikes your dust, away it goes. When we get up to feed that to an ordinary disc feeder, one of Mr. Richardson's disc feeders, and feed to a pug mill, that feeder will fill up on 30 mesh stuff, it would carry in bags of air, and as it would come down, that air would come down and remove the pressure and it would fill the pug



William H. Lucktenberg, Zanesville, Ohio.

mill and the whole building with dust. We hadn't any way to check that flow of that dust.

Mr. Hammerschmidt: I would suggest the use of a worm feeder and run it real slow. We have no trouble with the dust. We feed from underneath the storage bin by a worm feeder and we have a stream of water that hits it as soon as it hits the pug mill so it can't blow the dust. We have had the same identical thing in use for twenty years and have never changed it. Mr. Krick should try something like that.

Chairman Fries: Out of respect to Mr. Krick, the Chair wishes to state that he is a man who has more nerve than any clayworker I ever run across in my time. They worked off their surface clay. He didn't quit. They had to improve their plant to work that bottom clay. I say, "Hats off to George Krick, for he made a success and he surely deserved it." If there are no more questions any one wishes to ask Mr. Krick we will proceed with the program, "Importance of Subdrainage in Road Construction," by Will P. Blair, Vice-President of the National Paving Brick Manufacturers' Association of Cleveland, Ohio.

Mr. Blair: I have particular reason for coming up on the

platform, because I have noticed most of the speakers who stand down in front can not be heard in the back part of the room. I want to tell you about a few things, such as the fact that in this country we have increased in population 20,000,000 since we have added an inch to railway transportation, due to the fact that we have multiplied and increased our industrial activities by reason of inventions, demands for conveniences in our household machinery, upon the farm; in fact conveniences everywhere. We have increased our industrial activities really so far as tonnage movement is concerned to another 20,000,000. So we stand today as a nation equal to only 40,000,000 people for which we have provided no adequate transportation facilities. Some of our best economic and social statisticians say the American people spend 25 per cent of their time upon the streets and highways of this country. I might go on on this line for some time, but if I did I fear I will be accused of starting a bull race again (Laughter) so I will just try to strike the meat of a little presentation I have to offer the convention this afternoon.

IMPORTANCE OF SUB-DRAINAGE IN ROAD CONSTRUCTION.

Will P. Blair, Cleveland, Ohio.

Mr. President and Gentlemen of the Convention:

The improvement of our highways is now viewed with universal concern. Its meaning has been transferred from the abutting farm



Concrete Slabs Bored to Determine the Degree of Moisture in the Sub Soil.

owner who alone saw it as it affected his own interest and convenience, never once realizing that the consumer of his product could have any interest in the improvement of the road, and so was content for years to carry the burden without even intimating to his city friends, that a mutual benefit in all fairness should impose a mutual obligation.

So long as the city population so seldom witnessed the inconvenience, hardship and fearful cost of country travel and transportation, he too saw no advantage in extending aid if indeed he was aware that a changed condition was possible.

Automobile Influence.

There is an automobile for every seven persons in the states of Ohio and Indiana. It will therefore be seen that in twenty-four hours, every person in the two states could exchange places at points one hundred and fifty miles distant from each other, or either state could be abandoned entirely by its population in a day and a night's time. Such extreme possibility of travel and observation has not been undertaken, but it is accepted data entirely within reason that one-fourth the time of the American people is spent upon the roads and highways, so that, we readily understand that eyes everywhere, vision the activity of the other fellow, know his problems and easily discern how his own are affected in spite of the fact that the causes are quite remote.

A providential calamity of rain storm, flood and drought, heralded by the newspapers is well understood as a harbinger of high prices everywhere. Hitherto the calamity of mud and mire so relentless in its exaction of surtaxes, yet so silently borne in injury to horses, wrecking of wagons and broken harness, in-

augurating and operating as a consuming consumer of time, has invited no one to the rescue. But the blow-outs and blow-ups of the 4,729,384 tires in use in the two states named, have opened wide the eyes of everybody, at a strain of \$20 per tire, so that the cost from every defect in the road is now seen from a bushel of potatoes to the doctor's bill, from the farm gate to the cottage in the city and back from the great manufacturing plant of the east to the plow and reaper in the cultivated fields.

The auto has possession of the road, delivering its freight by thousands of tons and intermixing the city with the country folk, entirely eliminating the discriminated stranger from the citizenship of our country forever.

The city dweller now bears witness with an increased awakening that he has all along been sharing the waste, expense and inexcusable cost of delivery to him of all that he buys to sustain him in food, clothing and comfort. He has even become an alarmist and begs that his aid be accepted for his own preservation and welfare.

City Share.

The city has come to the rescue, in most states and nationally as well. In Ohio, city property contributes sixty-five per cent of the half mill levy for construction of her inter-county roads. More than half of the \$6,850,000 auto tax used solely for road maintenance is paid by city residents. The \$100,000,000 Federal Aid recently voted by Congress to be apportioned to the several states, comes from the government's treasury, the larger proportion of which is collected from sources within the cities of the country.

Obstructive Influences.

All factional claims for major authority, criticism, having ulterior design, the creation of political conspiracy, any subterfuge or any outcry whatever other than a constructive advocacy for a systematic, sane, safe program of road improvement which promises to insure a service which will be economic, both in original construction and maintenance, is utterly without justification.

Correct Viewpoint.

The only question worthy the asking and the only ones worthy of consideration are,

First, What kind of road and type of construction is best adapted for the service this or that particular road is expected to render?

Second, What details of construction shall be embraced in the particular kind and type to insure the greatest economy in both its construction and use?

These questions are pertinent and all inclusive. When they are correctly answered all objection to road improvement is silenced. The people will get value received. They will have in hand a fundamental of price leveling. They will have an adequate competitive power in transportation against which no agency can successfully prevail. Every known law of economy and every interest of public welfare demands that road improvement be confined and guided by such a program, not that these principles can be perfectly applied, but so far as human knowledge of the science of road building permits, it can and should be followed.

Proper Approach and Basis of Judgment.

Examination, inquiry, research, information in its application to every route to be improved, is therefore incumbent upon every one, sharing the responsibility for a proper expenditure of the money for the improvement.

Adaptation of Kind.

The first inquiry must be directed to the character, amount and kind of service the road is likely to bear. A careful survey of the route in its relation to surrounding production and possible through traffic, ought to furnish the basis of approximately correct judgment for kind and type applicable.

The Most Important Survey.

Next in order is a survey of topography, soil and water. Drawing correct conclusions from this survey involves the details for the preparation of the road bed—the sub-grade so called—to establish a continuous as well as the greatest soil bearing quality possible. It involves the most difficult task of all road building detail, because of the lack of definite knowledge. We have no accurate knowledge of soil character, its physical makeup or classification, its capillarity, its absorptive and evaporative qualities, the relationship in its behavior from moisture or water content, and the actual co-relation of temperature effects from all of which arises injury to the road due to what we term the influence of natural causes.

Exercise of Good Judgment.

In the absence of well established scientific data of these natural causes, our conclusions must be made up from common knowledge of many things, gathered in experience and observation. It does

not consist of refined data, but rather of a character that might be termed circumstantial evidence. We know all soils are weakened in their bearing power by moisture and water. We know that they expand with great force when saturated with water and with still greater force when frozen. We know that in certain extreme differences in soil aggregate, the bearing power is greater according to increased proportions of sand and gravel and less in bearing power as the proportion is decreased.

The flow of moisture through plastic soils moves slowly but when saturated, such soils slip and slide easily and their bearing power greatly diminishes.

We know too that soils of every kind, if dry, have very great bearing power and as it approaches its greatest uniformity of such quality, its bearing power under a roadway becomes of greater value and the variable influences are reduced in their effects. So with these known behaviors, the problems are to provide against the conditions which superinduce the destructive forces and as far as possible eliminate them altogether. If we can but realize that close to seventy-five per cent of the destructive agencies lie in the sub-grade condition and that twenty-five per cent is due to the use of the road, then the exercise of our utmost ability and perhaps if need be, a larger expense devoted toward utilizing the sub-grade for greater permanency and lessening the expense of maintenance of the road becomes a paramount duty.

Draining the Road Bed—Inefficient Method.

Draining the road bed is an old, old story. But the method of doing it has become a habit and not an accomplishment. The open ditch beside the road is inexcusable in almost every instance, if not an engineer's crime. It scarcely ever functions for the purpose of its creation. It clogs up constantly and does not carry the water to its disposal point. It feeds the sub-grade from its reservoirs by horizontal flow and effects by capillarity a saturation of moisture. It is a constant source of expense in the attempt to keep it in order. It adds to cost in keeping down the growth of weeds and briars along the road route.

The evaporation of moisture from nearby edges of the wearing surface follows, a sudden rise of temperature contracts the support where most needed by reason of which a raveling follows as the temperature and resupply of water is furnished, expansion returns. The intermittent supply of water saturating the sub-grade together with intermittent temperature, subjects the sub-grade to a constant and irregular contraction and expansion, placing the wearing surface on legs and uneven legs at that. Would it be possible for human ingenuity to place the wearing surface at a greater disadvantage to resist impact or static load or more effectively to hurry its destruction?

Effective Method.

What substitute method of drainage therefore seems reasonably sound and practical or rather to maintain a condition that does not need to be drained? We would suggest a liberal use of drain tile. Disposal drains located on either side of the road where the open ditch is now found, placed a sufficient depth so that smaller transverse tile drains can be connected to them through "T" joints and which should be staggered at intervals a distance apart according to the character of the soil in the sub-grade—the system as a whole far enough underground to be free from frost injury.

The road sides shaped to such grades only as will suffice to carry the immediate rainfall, through inlets placed at intervals leading into the disposal side drains.

The survey from which the engineer shall draft the profile for the road construction should bear record so that these provisions should find place in the details of the contract with as much minuteness and accuracy as in the details of a bridge plan. However, the drainage plan as outlined is not all. Where the soils are of slow moisture penetration, plastic in character and devoid of coarse material, a layer of coarse material of rock, stone, slag or gravel should be spread over the entire area to be occupied by the wearing surface and narrow fills of like material placed over the disposed drains, thus providing for an easy flow of water to the disposal drain tiles and preventing a flow of moisture into the superstructure and preventing an inflow of water from the adjacent area. All this preparation is not more costly than the open ditch, and certainly of greater practical permanency—a drain system that will work in winter as well as in summer.

Unless such a survey and such a treatment precedes the installation of the wearing surface regardless of whatever kind, an extravagant waste of money is incurred, utterly inexcusable in the light of what we now have, little as that may be.

As we better understand these natural destructive agencies and the remedies therefor, we can better appreciate the character of the artificial structure, including the foundation and wearing surface, which will best supplement the remedial provisions and insure permanency of the road as a whole. It can not be expected

that the outline of treatment will reach perfection in a uniform stabilization of the sub-grade. Do what we may so far as present knowledge is available, road surfaces will be subject to greater or less strains from below. In considering therefore the construction of the artificial foundation and a study of a character of surface which can be most perfectly accommodated to these natural strains, a most serious matter is involved. If the strains are once reduced to a minimum and the surface made to meet such strains, we will have reached a road construction, the very nature of which will insure the greatest permanency and remain longest without maintenance cost.

In the succeeding steps in the construction of a brick road such a resilient character of foundation and surface as will most nearly adjust itself to the sub-structure strains would seem advisable.

We have noted that rigid surfaces and foundations break and crack from the forces exerted in the sub-grades. A broken stone or other coarse material for foundations furnishes additional drainage and a further prevention of capillary action. It can be compacted entirely sufficient to withstand impact and load as evidenced from railroad experience. It is sufficiently resilient to embrace a cushion relief and remain uninjured by forces exerted from below or above.

Brick Wearing Surface.

Upon such a character of foundation and sub-grade it is quite possible to place a brick wearing surface in entire conformity therewith, and equally adjustable thereto, possessing all the elements of cushion, resiliency and shock resistance. Why should all the relief be borne by the automobile tire?

To attain the greatest value in these essential qualities, the brick should be placed on a sand bed of sufficient thickness only, as will care for the unevenness of the brick and insure an even surface to the finished pavement. The joints should be filled with an asphalt filler of a quality and refinement as will protect the edges of the brick, hold them together, and will not congeal and become brittle in cold weather or flow in hot weather, and yet sustain without actual or apparent injury its monolithic character. Brick roads can be so constructed because they have been, demonstrating all these elements of durability and permanence.

As to the abrasive effects, the wear and tear of traffic, mention need scarcely be made. Brick are so little injured from the effects of traffic that injury from this cause through long years of experience and use, is no longer regarded with serious doubt. In the character of the construction as outlined, a paradoxical feature is worth notice. While the writer regards as the best it is not the most expensive by any means, in fact in many instances due to adjacent supply of coarse material that may be used for its part in this construction, it may become the less expensive and least expensive of all measured by the three cost factors of construction, maintenance and use. (Applause.)

Discussion.

Mr. Blair: I stepped down to the State House to carry that resolution which you so courteously passed yesterday afternoon relative to paving brick. I stepped into the highway department, and being somewhat acquainted with the roadway from Bloomington to Spencer, being a part of the highway leading from Terre Haute to Cincinnati; it is a stone road, and I asked the maintenance engineer how much money they had expended on this road in the last two years. He looked up the record, I saw it myself and it read \$3,000 a mile—\$150,000 a year for two years for maintenance. I met a man yesterday who lives in sight of the road and asked him about the condition of that road. He said, "It is in such poor condition that I avoid it when I go to Bloomington," and yet it costs \$3,000 a mile to maintain it. I happen to know this National road which leads 14 miles west. There has been expended \$50,000 a mile during a term of twenty-five years. I think we all of us need something to impress upon our minds the necessity of paying some attention to these things which are absolutely of interest, especially to the tile people, as well as the men who make the surface material for roads. It is better then to see that in every community every sub-drain is perfectly laid so the waste of money will stop. I now have some slides to show.

(Mr. Blair then showed a number of slides illustrating the various points of his paper.)

Mr. Blair: I am so interested and bound up in these questions, some of these things I have told you about have

only been released to the scientific journals within the last months, when I get started I can hardly stop.

Secretary Randall: Mr. Chairman, I see in the audience a man who did some wonderful work along brick paving lines when the industry was in its infancy, and if there is a minute to spare, I am sure we would all be glad to hear from Mr. George Grimes. (Applause.)

Chairman Fries: We will be glad to hear from Mr. Grimes.

George Grimes, Terre Haute, Ind.: Mr. Chairman, and Gentlemen of the Convention, I thank Mr. Randall for calling me out, but I can not make a speech for I have no voice. I have been out of the game fifteen years and of course many things have changed since then, and I could not say anything of interest without preparation, but I have been much interested in Mr. Blair's paper.

Chairman Fries: Before we go into the discussion of this paper, Secretary Randall has a telegram he wishes to read.

Secretary Randall: I am perhaps the proudest man in the country today. If I swell up and burst, don't be surprised. This is something I never anticipated, I have a telegram from President Harding.

THE WHITE HOUSE, WASHINGTON, D. C.,
THEO. A. RANDALL,
SECRETARY NATIONAL BRICK MANUFACTURERS'
ASSOCIATION,
INDIANAPOLIS.

PLEASE CONVEY MY SINCERE REGRETS THAT I CANNOT BE PRESENT AT THE THIRTY-SIXTH ANNUAL BANQUET OF YOUR ASSOCIATION TONIGHT. I VERY GREATLY APPRECIATE THE UNIQUE AND CORDIAL INVITATION WHICH YOU EXTENDED AND I WISH SINCERELY IT MIGHT HAVE BEEN POSSIBLE FOR ME TO JOIN YOU. UNDER THE CIRCUMSTANCES I CAN DO NO MORE THAN EXPRESS MY CORDIAL GREETINGS AND GOOD WISHES.

WARREN G. HARDING.

(Applause.)

It so happened when we made the presentation of this brick tablet bearing an invitation to President Harding to attend this convention, we had photographs made of the brick and of the mahogany box in which it rested, and we have had a slide made from same, thinking you would be interested in seeing same. We also have a picture of our good President which you may all like to see. (Showed slides of President Harding and the clay tablet with the invitations inscribed thereon.)

President Harding has always favored brick because he knows it is the only indestructible building material. We know he appreciates it for other uses, because sometime before he became President he wrote an editorial for his own paper, which was afterward copied in the American Clay Magazine, and I have it here and I believe you will be interested to hear what he had to say about brick roads.

BELIEVES IN BRICK ROADS.

The following leading editorial printed in the Marion Ohio Star, July 10, 1914, is from the pen of Warren G. Harding and is a pleasing indication of what President Harding thinks of brick roads. Mr. Harding has a clear and forceful style as will be seen by the editorial. It should be noted, too, that though his home interests might easily lead him to have another preference, he stands unequivocally for quality first.—American Clay Magazine.

The Value of Brick Roads.

The decision of the county commissioners to improve a mile of the Marion and Bucyrus road, in north Marion, with brick, is not only highly pleasing to those who have noted the distressing

condition of this main highway of travel, but it is accepted as a hopeful sign that the commissioners are going to give favorable consideration to brick for all future improvements of the main highways. The adoption of the paving brick for road surfacing will prove the most notable step toward permanent road improvement ever made in Marion county. Brick surfacing makes not only the most enduring work, which proves the cheaper in the course of years, but it is more sightly to the eye, more easily covered by vehicles of all kinds, but more comfortable to travel, and largely spares the homes along the route the intolerable dust of the dry season.

This commendation of brick is not written because of the comfort it affords to residents or motorists. It is not written from the motorists viewpoint at all. We are thinking of getting a permanent improvement for the vast expenditure made in this county for improved roads. Within the past three years large sums have been expended on the Prospect and Caledonia roads, which were made into beautiful highways for about ninety days, but are now, after less than two years' use, in disappointing condition. No great blame is to be laid at anybody's door. Our commissioners thought they were getting good roads, but experience is proving that no macadam or gravel construction will stand under the trying and excessive driving of the present day. Perhaps a road patrol, seeing to immediate repair, whenever a break shows, would add to their durability, but we have no patrol. Brick would not require this constant watching, and would yield to more ready and more effective repair when repair is needed.

The really notable improved road work is being done with brick. It costs considerably more for the initial expenditure, but ten years of use and the attending repair account will prove it to be cheaper in the end. Even in Florida, where drainage needs little attention and the foundation is constructed on sand, the boasted road building today is surfaced with brick.

The average Marionite, who delights to boost home industry, may unthinkingly proclaim this commendation of brick over macadam to be disloyal to our great crushed stone industry. But it is not so. Our stone must be used for the substructure for brick the same as in tarred, asphalt-bound or water bound macadam road. We shall use few less stone, and we shall get ten times the value in improvement to that we have lately received. Our expenditures are too large and too important not to be getting more permanency. We must turn to the brick surface to get something to endure the test of modern travel.—Marion (O.) Star.

President Harding Adopted an Honorary Member of the Association.

As I told you yesterday, when I presented this brick to President Harding he said he was deeply interested, and after looking it over the second time, said, "I am much pleased with this, more than you think, and there is a reason—when a boy I worked on a brick yard as offbearer." (Applause.) Now, Mr. Chairman, I move we make President Harding an honorary member of this Association.

Mr. Burton: I second the motion.

Motion carried by a rising vote.

Chairman Fries: Now, let us not lose sight of this interesting paper just read by Mr. Blair. Mr. J. A. Reeves, of Streator, Ill., will discuss this paper.

Good Roads; How to Build and Maintain Them.

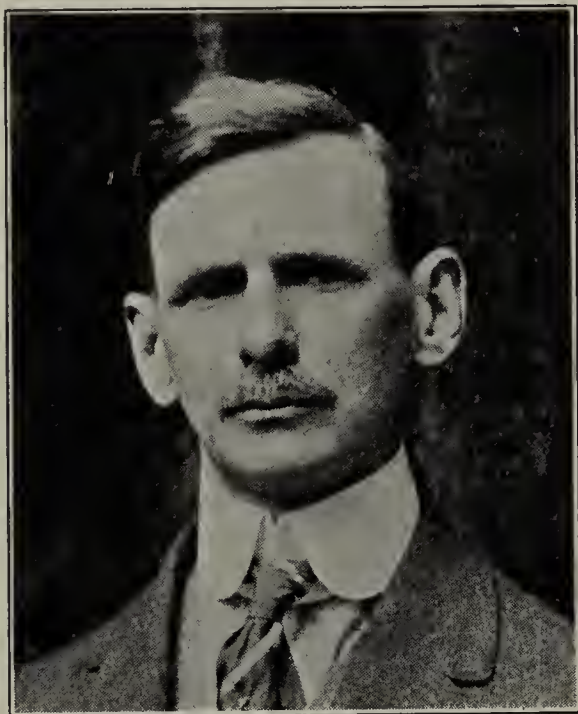
J. A. Reeves, Streator, Ill.: I believe I would be better able to discuss the merits of road tile drainage than the methods. This proposition interests the drain tile manufacturers as well as brick manufacturers and engineers. I do not think there is a subject that comes before our drain tile manufacturers which presents as much opportunity for sales promotion as the question of making road tile or drain tile for road drainage. In Illinois, our state engineer has claimed that we are one of the foremost states in road construction.

I have a clipping from a paper from which I propose to read a part, because I think it is a problem in which we are vitally interested and which we want to have straightened out. The clipping is from a Chicago paper, and reads as follows:

"An experimental road which will eliminate the guess-work in road building was described by Clifford Older, chief

highway engineer of Illinois, before the American Road Builders' Association. The road is located near Springfield, Ill., is two miles long and known as the Bates Experimental road. Illinois, Mr. Older said, has attained a leading place as a road builder and in scientific design and construction. Pennsylvania led with high type pavement construction in 1921, he said, with Illinois second. For 1922, Illinois aims at 1,000 miles of paved roads ready for traffic. Mr. Older explained the experimental work he had carried on, as a result of which he declared 'tile drains were practically useless.'

It seemed a strange thing that any engineer would make such a statement, and I made it a point to try to find out just how they had used the tile in that particular work that caused him to say drain tile were useless. I found it was highway drainage in which he used the tile out near the fences and sub-base drainage. Mr. Rossiter of Chicago is, I think, one of the foremost engineers in the State of Illinois, and while I don't propose to burden you with reading a long article written by some one else, I now want to call your attention to an article in the Municipal Journal published in Indianapolis, in the January number, and entitled, "A Drainage Expert's Ideas on Drainage Construction," by E. A. Rossiter. He states that a great many technical articles have



J. A. Reeves, Streator, Ill.

been written about road drainage and almost every one indicates that they know little about the subject, and further on in the article he takes the position that that should not be so. It should be just as much a matter of scientific and positive knowledge as the building of sky scrapers or any other engineering work. His ideas correspond in the main with Mr. Blair's ideas. It is absolutely necessary that the road base or sub-base be properly drained and made perfectly bone dry so it will not be subject to freezing and thawing, and for that reason affect the road surface. This is the National Brick Manufacturers' Association meeting and the time properly belongs to them, but the drain tile manufacturers believe in the brick road. They believe furthermore that the first step in the construction of good roads is the proper drainage of the sub-base. It takes a little time after the tile drains are properly installed for the sub-base to become perfectly dry. Some contractors follow the sub-base construction with an immediate application of the surface, so the road is completed within a short time after the road is contracted for. The road base should be properly drained first and made water proof on top by oiling or in

some other manner, as the tile drains make it waterproof on the bottom. The road in one or two years would become perfectly dried out and could then properly receive whatever surface the community desires to put on it. While we think the brick road is the proper road to build, possibly its advocates are making haste a little too rapidly. It would be better in view of eventual competition with cement, to advise properly draining the road and allow that to stand for possibly a year or more until it becomes properly dried, meanwhile being available all of that time for transportation or traffic of whatever character 365 days of the year, and then when the time comes that you brick manufacturers come into competition with the cement people for the hard-surfacing of the road you will have easier competition than you would have had at the outset.

As to the extent of the drainage and the way in which it should be done, that is of course a technical problem and a subject for engineers. I do not profess to be competent to discuss that part of the subject. Six or seven years ago a farmer commissioner in a nearby county decided to adopt tile sub-drainage plan for an eighteen-foot road. He had installed two strings of tile parallel and eight feet apart, leading to the nearest available outlet, and he got the water out of the sub-base of that road. Mr. James Randall is quite familiar with the details of that road. As a matter of fact, that road is now doing service today and cost less than one-third of what roads were ordinarily constructed for. Previously the road had to be continually filled up on account of the pockets of quicksand, and an immense amount of money had been expended on it, but today that road is doing good service. The demand for good roads is growing throughout the country. Roads that have been made safe to travel, the communities will eventually want to have hard surfaced. I believe if communities have the safe use of roads all the time and contemplate hard surfacing, the brick manufacturers would have a better chance than the cement manufacturer to furnish the material than they have when the entire project is contemplated and bids are asked for the complete works.

One thing I want to call attention to in connection with this article of Mr. Rossiter's. He recommends two strings of tile draining to the nearest available outlet, and illustrates it very much as Mr. Blair has. I would say the Rossiter plan was a great deal cheaper and fully as efficient. In that last picture it showed a large acreage draining into the ditches along the highway. There can be no permanent road drainage in a territory of that kind until a drainage district is established so all these acres may be drained and a permanent system established, the expense to be shared between land owners and townships according to the benefits.

I would advise strongly looking into the plan of leading two strings of tile to the outlet. It is a very economical method of draining, it being possible to dig the ditch and lay the tile without having to zigzag back and forth.

Getting back to the thought in regard to the drain tile manufacturers' interest in this matter. We all know that agricultural values have fallen off to an alarming degree; that prices are so low the farmers think they are broke; they question the advisability of tiling at all, though not one of the manufacturers here today but could meet up with a farmer who needed tile and could convince him that he positively could not afford **not to tile**, but there is no way to reach him except to circularize, as we can not personally interview very many of them.

We are all particularly interested in good road building. The American Society of Agricultural Engineers had their meeting in Chicago in January. I was not able to attend, but one of their members from Mason City, Iowa, came out to see me. The concern he is with has six large plants. I

inquired as to how business was with them in Mason City. He said they had one plant running and that plant was running on road tile. It is a big field for us. In Iowa and Minnesota they are letting enormous contracts and they are using tile for drainage. The Illinois specifications for State Aid roads states that the roads shall be adequately drained, or something of that sort, but they miss the importance of draining as a part of road construction. The drainage of the sub-base is the particular thing that would make business for the drain tile manufacturers of the country, and you can not go too far in arriving at a well established conclusion as to what you want to do and then get behind it. (Applause.)

Chairman Fries: Just one little instance I want to relate in connection with what the speaker has said. It is true there is a provision in the specifications of the Illinois Highway Improvements that the roads shall be drained, but there is another thing. I happened to be present at the convention of Illinois contractors about a year ago in Chicago, and Mr. Older was on his feet and he stated as he did in the article Mr. Reeves read to us that you can not depend upon this sub-drainage, that you must make the slabs of sufficient strength to resist the forces that are exerted to destroy them. Of course we know if you make the surface thick enough you can rapidly see the cost mounting high and higher. Now, as to the character of drainage; after he had finished talking, a contractor in the back of the room got up and said, "Mr. Older you have been boring holes through the roads you have been building, haven't you?" Mr. Older said, "Yes, sir, we have." "How many do you bore?" "About two hundred to the given space." "What did you find when you bored through the concrete surface?" "Water." "In all of them?" "Yes." Here eighteen months ago Mr. Older advocated drainage and he has drained every one of his contracts, but when they bored through 200 places in the concrete roads they found water in every instance.

Mr. Reeves: In this article I mentioned, of Mr. Rositer's, he takes up this plan of Mr. Older's, and in the course of same he says the tiles used in the way Mr. Olders recommends might just as well be hung on the telegraph poles, and it is engineers of that sort that do more harm than good.

Mr. Thomas, Bremen, Ind.: I spent two years in France for Uncle Sam, and I had a twenty mile drive I made each day. I got very well acquainted with several French engineers. Building a road over there is quite an occasion. They will lay out a road and drain it at least two years before they let the contract for the surface. I think the success of any road of any material is going to depend on the drainage.

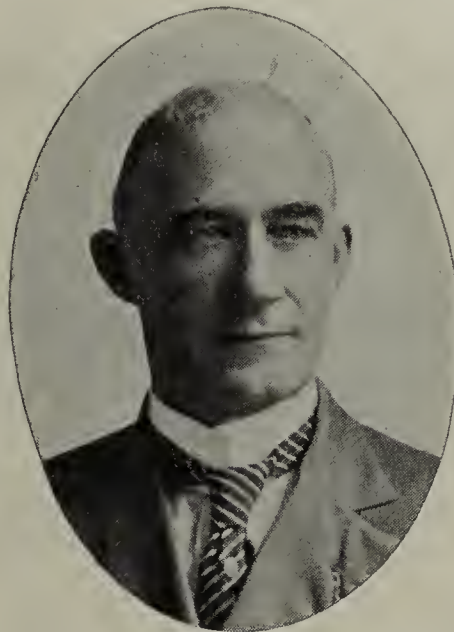
John W. Sibley: As many of you know, for a number of years I was in the paving brick business, as Secretary and Manager of the Southern Paving Brick Manufacturers' Association. In the latter part of 1917 we built a road from Anniston, Ala., to Columbus, Ga. The Government spared no expense. About two-thirds of the road was built on an old macadam road that was already in, surfaced with a semi-monolithic construction of brick. I went over this road not long ago after almost five years of constant use, and I found 95 per cent of that road was still in perfect condition, so far as the wear of the brick surface was concerned, but the only place where there was any failure was where the brick road was built over a marshy low land as it went up and down dale and hill, and the engineer was so interested in getting a sufficient foundation of eight inches of concrete on that place he did not get sufficient drainage. A string of heavy trucks went over that road every day during the war, and pounded that road mighty hard, and the only failure was where they did not have the proper drainage in the

low, marshy places. It is practically as good as when put down.

R. C. Burton: If any of you ever come east to Zanesville you drive over fourteen miles of brick roadway. The Government did not spare any expense to have the road made right. There were a number of swamp places that had to be fixed first. Every day there were thirty or forty army trucks passing over that road and the Government said that road must be fixed up in first-class condition. We went into those swampy places and some of them were filled up and we drained them out. We put twelve inches of broken stone on that and rolled it with a thirteen-ton roller. If the stone went down out of sight, we put on more. We kept on until we had a good base, then we put down a good brick pavement. That was put down in the early spring of 1918 and I defy any one to find any difference in any part of that road, over the swamp or anywhere else. There has not been a single cent spent on that road. It is better today than when put down.

Chairman Fries: Mr. President, I yield the gavel to you, and I wish to assure you I have enjoyed myself while occupying this chair. I thank you.

President Wilson: I do not think Mr. Fries enjoyed him-



D. Warren DeRosay, Corry, Pa.

self any more than I did to have him fill the chair. I thank him very much for doing so. We also want to thank these tile manufacturers for coming in and taking part with us. I am quite sure the National Brick Manufacturers' Association will be glad any time to extend a cordial invitation to any of the allied industries to come into our sessions and take part with us. I will ask Secretary Randall to announce the next.

Secretary Randall: We are going to have a little variation in the program, Mr. President, if it is your pleasure. Some who were on the program this afternoon have not come in yet, and there has been a request for one of the papers on tomorrow's session, that by Mr. William Hanley, Jr., of Bradford, Pa., "The Advantages and Disadvantages of the Tunnel Car System of Burning Brick and Tile."

ADVANTAGES AND DISADVANTAGES OF THE TUNNEL KILN SYSTEM OF BURNING BRICK AND TILE.

Wm. Hanley, Jr., Bradford, Pa.

Gentlemen of the Convention:

In entering into a discussion on the merits and demerits of tunnel kilns for the manufacture of brick and tile, I can only give my observation from our particular installation, and wish to give unbiased statements as coming from a brick manufacturer's standpoint. On the credit side we should list the following:

Approximately,

Fifty per cent saving in fuel.

Fifty per cent reduction in variation of color or hardness and more accurate burns.

Twenty per cent saving in setting if the product is reset.

One hundred per cent saving in setting if brick are hacked on the kiln cars and put through an efficient humidity dryer like our installation. This, however, adds about 40 per cent to the cost of hacking on account of the more accurate workmanship demanded.

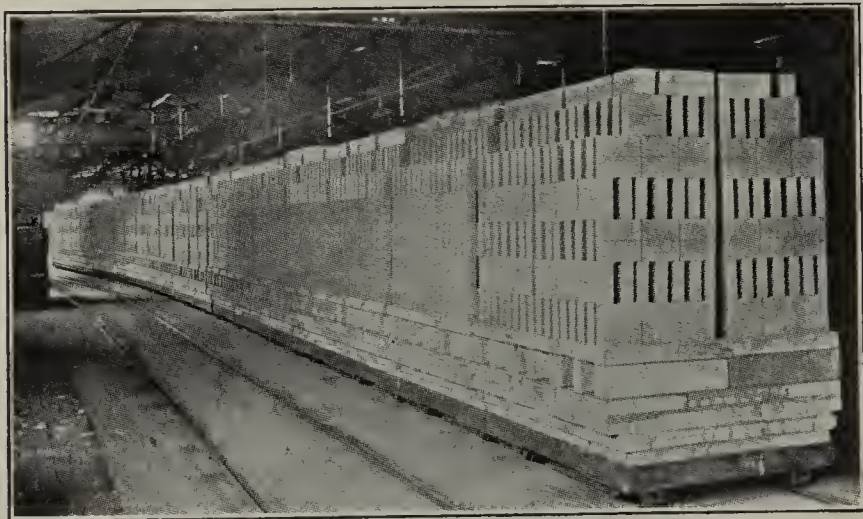
Twenty per cent saving in unloading and sorting. This can be materially reduced by mechanical handling which can be adopted to tunnel kiln plants.

Sixty per cent less working capital is required for material in process of manufacture.

On the repairs we feel that the expense of cleaning and repairing down draft kiln bottoms will average higher than repairs on kiln cars. The repairs on furnaces and bag walls of down draft kilns will average little higher than renewals in the hot chambers of the tunnel kiln. The repairs on kiln crowns will offset repairs on the mechanical parts of a tunnel kiln. Therefore, our observation is that on the yearly repair bill that the tunnel kiln will have a slight advantage over the down draft kilns for the same output. On the depreciation side the tunnel kiln should have double the life of down draft kilns as they are maintained at a constant heat, under cover and are made of higher grade material with better workmanship.

On the debit side will list the following:

A larger fixed investment is required depending upon individual conditions from 10 to 50 per cent higher than the same production from down draft installation.



Bradford Reds on the Way to American Dressler Tunnel Kiln.

More dependable power is necessary on account of the fans and pusher.

Should have more dependable machinery all the way back to the pit, with a factor of safety to guard against breakdowns.

It requires better mixing of clay so as to avoid any chance of brick tipping off the cars while in the kiln.

Inefficient management and labor causes more loss in a tunnel kiln plant than the old type.

Less flexibility in regards to other clay products.

Larger overhead in proportion where production is reduced than in the old type plants. In other words, overhead per thousand on a tunnel kiln at 50 per cent production is higher than the down draft at half production.

As this is a very broad subject that can hardly all be touched upon, I wish to conclude with some very important considerations in installing tunnel kilns.

1. The economical unit is two kilns with an electric transfer, at each end, as the cars are so heavy that mechanical handling is practically necessary.

2. The best results are obtained from a new plant as you save the resetting and by putting the brick dried from the dryer to kiln you save most of the watersmoking in the kiln and have the inside of the load of brick heated up. A slight saving of fuel is also thereby made.

3. Make sure your equipment is A No. 1—from the kiln to the pit, as a shut down in a tunnel kiln is a considerable expense compared with down draft kilns. For the same reason your selling should cover a ground so that it will not be necessary to shut down your plant during depressions. Plenty of storage space should be required for the above reason.

4. Do not have too large a kiln car.

5. Have plenty of burners.

6. Avoid material that has too much carbon, and very much shrinkage.

7. Figure on plenty of time and money to get everything worked out satisfactorily, as there are always some peculiarities of your clay to figure out when you start your kiln, and it takes time to train your men and get organized.

8. Remember that the tunnel kiln has enough to do in burning and that no product should be put in that is not bone dry.

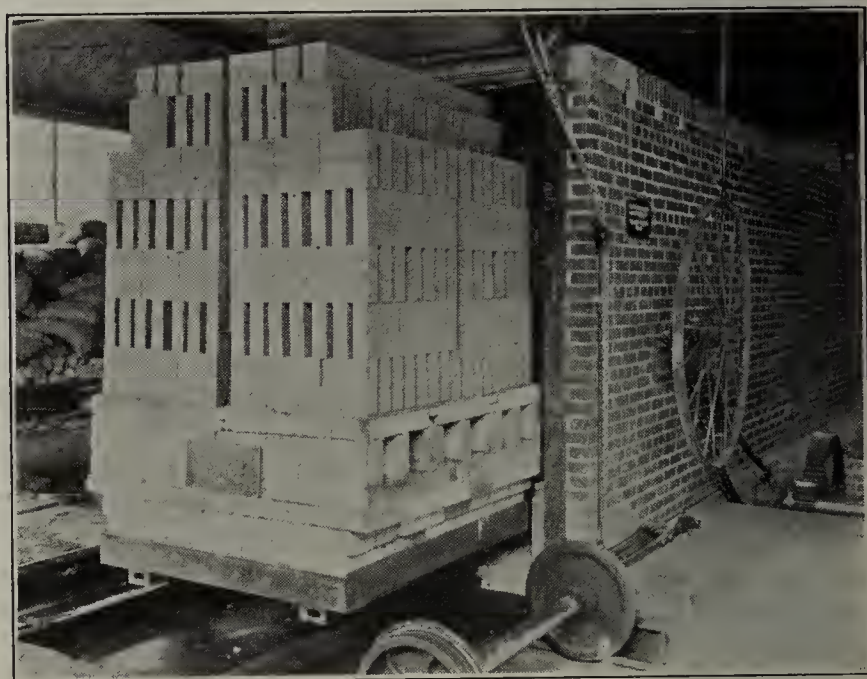
9. Personally we believe the muffle kiln is the only one today that can safely get the production and quality on crude clay products. Some day a direct fired or semi-muffled kiln may be perfected that will do the trick.

10. Don't be afraid to spend a little time and money investigating kilns and equipment. Know your material thoroughly and the product you intend to make.

11. Last, but not least, put in only a kiln designed by people who have been through the game, and have the proper organization for applying the kiln to your requirements. Also do not skimp on the kiln as it will pay you many times over later in shut downs. (Applause.)

President Wilson: This paper was to have been discussed by Mr. Donnelly of Connecticut. Is he in the room? If not, we will be glad to have any one else lead in the discussion of this interesting paper.

R. C. Burton: I rather think a vote of thanks is due



A Carload of Bradford Face Brick Coming from the American Dressler Tunnel Kiln.

the Dressler Tunnel Kiln Company for bringing the plant of the Bradford Press Brick Company to us, and I therefore move this convention extend them a vote of thanks.

Seconded by several and carried.

President Wilson: As we have nothing more for this afternoon, we will stand adjourned. Please get in as promptly as possible in the morning.

FOURTH SESSION.

Friday Morning, January 27, 1922.

President Wilson: Gentlemen, we are a little late getting started this morning. That was a wonderful entertainment we had last night. I have been to many such entertainments and banquets, but you will have to go a long ways before you get a greater variety of entertainment than we had last night. I don't blame these Hoosiers for being so "cocky" about Indianapolis. They certainly have a lot of talent right here at home. I will ask Secretary Randall to announce the first order of business this morning.

Secretary Randall: The first thing on the morning program is "Lessons of Fire Tests," illustrated by slides, by S. H. Ingberg, of the Bureau of Standards, Washington, D. C.

Every man attending this convention is, or should be, vitally interested in this subject.

S. H. Ingberg, Washington, D. C.: I believe I will follow the example of the afternoon orator of yesterday and get up a little higher. I am suffering from a climatic distemper that usually gets us when we don't want it. It is perhaps a little unfortunate that I should be the first on the program this morning after that magnificent flow of wit, wisdom, eloquence, poesy and prose of last night. I do not know that I am capable of bridging between that and the every-day affairs of life we are going to discuss this morning. I want to express, however, my appreciation of the treat last night. I have heard a great deal about Hoosier literary talent and oratory, but I had no idea of the genuine human element behind it all. I wish, like some of the Hoosier banquet orators of last night, that I had had some experience in making brick. The best I can say is that I work as hard in their interest, but as I sat and listened to the papers yesterday and the discussions, I began to revive my interest and respect for this oldest of the useful arts, because if for nothing else in many ways our work is pretty much related, the work in which I am now engaged. We are concerned with brick and kilns. We want to get temperature uniformity, want to run temperatures high, and the depreciation, and the equipment troubles us, and it is just one thing after another, and when we finally get it all in shape, we are ready to move on to some new piece of work and repeat it all over again.

When the request came for some information of the Fire Resistance Works of the Bureau through the Director—I suppose your Secretary here has a considerable pull with the high Government officials, due, I think, to his rather remarkable faculty for making and keeping friendships—when that request came through we were not quite finished with the present investigation, so we could not very well accede to his wish at that time. When, about a week or two ago, there came a request for some one to say something on our work here at the convention, the word was passed on to me. We are further along with our work and can give you some definite conclusions of the work in which we are engaged. We have something of an investigation that was closed about a year ago and with which the illustrated matter of my talk will deal.

(The illustration for this paper had not been received up to time of going to press, so the paper is withheld and will be given in full in a subsequent issue.)

President Wilson: The next on the program is a paper, "Importance of Proper Appraisal of Clay Properties," by H. B. Hall, of Milwaukee, Wis.

Secretary Randall: While Mr. Hall is getting ready to present his paper, I want to suggest it seems as though we might be able to finish our program with this one session staying right through until one o'clock or so. It seems better to stay in the convention hall while we are here, so I think we may pass the word that if possible we will finish up with this session.

President Wilson: Gentlemen, we will now listen to Mr. H. B. Hall of the American Appraisal Company.

IMPORTANCE OF PROPER APPRAISAL OF CLAY PROPERTIES.

By H. B. Hall, the American Appraisal Company.

Mr. President and Gentlemen, National Brick Mfrs. Association:

I feel at something of a disadvantage in standing before a gathering of men who make such substantial things as bricks. Not that I have in mind the physical hazards which might be involved (I assume you have brought none of your product with you) but rather to the inborn suspicion, amounting sometimes to prejudice commonly found in men who devote their lives to creating things,

for men who figure only in an incidental way in the routine problems incident to the creation.

While I hope that I can convince you that the business, or rather the profession in which I am engaged plays almost, if not quite as important a part in industrial progress as does yours, still one cannot but stand in awe of a business so rich in tradition, and which gives to the world such tangible products as do the ceramic arts and trades.

The importance of an industry or a profession is properly measured by the power of its product or service to produce visible or spectacular shocks to the human senses.

The steel business is an example of this. Its huge plants, vast and complicated organizations, enormous concentrations of capital necessary to carry it on and the perfectly obvious multitude of uses to which its products may be put, all tend to give it a dramatic appeal to the human mind, which makes it a subject of discussion at the corner saloon, as well as in the most exclusive of bankers' clubs.

The spectacular surgical operation and the surgeon, the sensational trial at court, and the participating judge and attorneys, carry the same appeal.

And so it is with your business. No man with red blood in his veins can drive mile upon mile over brick paved roads between rows of brick built buildings, or be he a city dweller, can he look out of his office window and fail to sense the fact that next to the sunlight itself the thing which most often comes within his range of vision is brick, and the vastness of your business, its



S. H. Ingberg, Physicist, Bureau of Standards, Washington, D. C.

permanency, and its importance, must make a lasting appeal to his dramatic sense.

So too, has the appraisal profession its spectacular and sensational aspects, its shocks to the human senses. Our audiences, however, are smaller.

The monuments to our activities are not in the shape of vast structures of brick, steel, lumber, cement, or stone, as are yours, but like the surgeon who can say "but for me that man would probably be under the sod," we can look to countless industrial plants and say, perhaps but for us that plant would be dead, no smoke would be coming from its stack, no whistle would be blowing, and the decay of a once flourishing business would be everywhere in evidence. We supplied their bankers with the facts as to the value of their plant, which secured for them a loan. It was our appraisal that made them carry the correct amount of insurance, and enabled them to collect in full at the time of their fire. We enabled them to know that the offer made for their plant by a promoter was half what it was worth. We supplied them with facts regarding the cost of their property, which their books failed to reveal, and aided them in the settlement of the assessment the Government had made against them. We gave them the correct foundation for their cost system, the installation of which marked the turning point in their career.

Your product is an inanimate thing—ours an animate one—a service—one which aids in preserving the breath of life in business that it may function surely, profitably, efficiently and indefinitely. There are few of you probably who are unfamiliar with appraisal service, and the manner of its rendering, but for

the benefit of those few I want to sketch as briefly as I can just what it comprises, and devote the balance of my time to the discussion of its uses.

An appraisal organization sends competent and qualified representatives to a property, usually a manufacturing plant, who make complete detailed, and itemized descriptions of every item found in it. This means a legal description of land, complete bill of materials and plans for each building, and complete specifications and catalog descriptions of all machinery, tools, piping, transmission, furniture and fixtures, and miscellaneous items belonging to the permanent operating plant.

A minute examination into the condition and serviceability of each item of property is made, and the practices of the plant management as regards maintenance and repairs investigated.

These plans and specifications, descriptions and reports on condition are sent to the headquarters of the appraisal organization, where they are subjected to the processes of checking, classifying, pricing, computing, summarizing, executive review and certification, and are returned to the owner of the property in the shape of an indexed, typewritten and bound volume, which comprises a complete encyclopedia of his property showing the cost to reproduce each item and its value to its owner.

I could go into considerable detail as to the complexity of an organization necessary to render a service of this character, the wide range of talent which must comprise the field staff to be able to intelligently describe and report on the thousands of items which go to make up an industrial property, the Home Office staff with its vast cost data, statistical and analytical records, formula, etc., the mechanical facilities which enable them to apply them to specific properties and the executive staff which reviews every report to make sure the organization policies and standards have been complied with, but this is a story in itself, and time forbids.

It is value, not cost, that a purchaser would be most interested in, and it is value that you yourself should be most interested in.

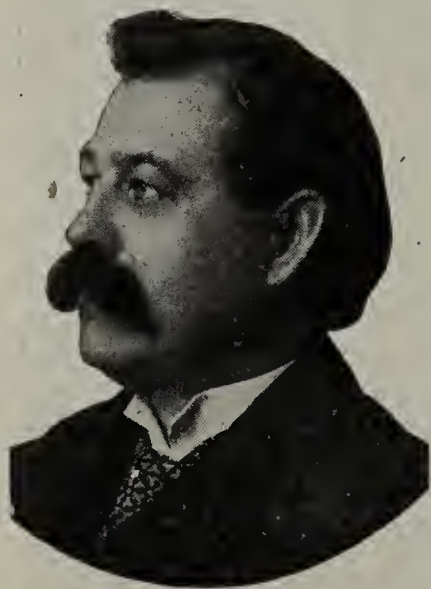
Most of you probably have the co-insurance clause in your fire insurance policies.

If you have, it means in effect that you have entered into an agreement with the insurance companies to carry insurance amounting to 80, 90 or 100, as the case may be, per cent of the value (not cost) of your property and failing to do this you have agreed that you will stand a proportion of any loss you may have, which proportion is governed by the extent to which you failed to live up to your agreement.

The value of a property for instance might be \$100,000, and under the 80 per cent co-insurance clause in order to collect 100 cents on the dollar for any loss which might occur, it would be necessary to carry insurance amounting to \$80,000. Instead, insurance amounting only to \$50,000 might be carried, this possibly for the reason that the co-insurance requirements had been figured on book values instead of actual value (cost of reproduction less depreciation). Suppose an \$8,000 fire occurs. The insurance companies would pay their proportion of the loss, fifty thousand eighty thousandths or \$5,000, while the insured would have to stand his proportion which would be thirty thousand eighty thousandths or \$3,000.

The insured who carries co-insurance will collect a fraction of any loss he may have. The numerator of the fraction will be the amount of insurance carried and the denominator the amount he should have carried—a percentage (80, 90 or 100, as the case may be) per cent of the value of his property.

The co-insurance clause is perfectly legitimate and necessary. The insured gets a reduction in rate by reason of its being in his



Harry J. Flood, Chicago, Ill.



James P. Martin, Lancaster, Pa.



William Arbuckle, Rushville, Ind.

Appraisals are usually made for either one of two purposes—to find the value of a property from a disinterested point of view as of any date, or to find the investment in it. There is considerable difference between the two.

The value of a property as of any date, assuming it to be a going concern, is its appraised cost of reproduction at that date, less the accrued depreciation.

The investment in a property is its actual cost.

It is only in recent years that industry has called on appraisal organizations for anything but the former. It was inclined to scoff at the idea that there could be any better evidence of the latter—the investment—than the books of account. The Income Tax, however, has made it possible for us to say, "I told you so" on this point, which I will discuss later.

An appraisal made to show the value of property disregards actual costs and shows the owner of the property what it would cost to replace it under today's market conditions, the accrued depreciation on it resulting from age and condition, which deducted from the appraised cost of reproduction, leaves the sound or fair market value to a going concern.

Such a valuation may be higher or lower than the cost.

If the property was erected under favorable conditions, that is during a period of low labor and material prices, or was acquired at a bargain, an appraisal made on the basis of current marked conditions would show a substantial appreciation.

On the other hand, in the case of a plant erected under prices prevailing in 1920, for instance, the appraised value at the present time would probably be less than cost.

It is value, however, not cost, which should govern the amount of insurance you carry, for it most certainly will govern the amount you will collect in case of fire.

It is value, not cost, that your banker is most interested in.

policy and if he lives up to its requirements he will collect one hundred cents on the dollar for any fire loss he may have.

To do this, however, he must know and not guess or depend on his books for the value of his property and whether or not he has co-insurance he must have a detailed inventory of it made before the fire from which to prepare his proof of loss.

Appraisal Service furnishes the insured with reliable disinterested and authoritative information which enables him to place his insurance intelligently, scientifically and economically, and at the same time gives him the assurance that he at all times can readily prove up any loss he may have. It makes his fire insurance positive—an investment rather than a speculation.

Much has been said and written about the mental gymnastics of the average banker when he sights an applicant for a loan in the office.

I think I recall reading a fantastic tale somewhere of how he sizes up the appearance and mannerisms of the applicant—his clothes, shoes, hat, etc., down to the color of his eyes and hair, the odor on his breath and other details too numerous to mention, all of which proves that the fiction writers are still on the job and little more.

The modern banker wants facts.

Facts are his meat and drink and the applicant who cannot produce them is out of luck.

John Smith, we'll say needs money. He has a manufacturing plant, a business and a set of books but little more. He packs a few generalities as to past performances and future prospects in his head and his books under his arm and goes to his banker. The glamour of his surroundings makes him forget the speech he had framed up and he has to preface his explanation of his books by admitting that he knows they're wrong; but he "just thought he'd bring them along anyway." The banker may ask him how

much money he thinks he needs and so far as his ability to an intelligent answer is concerned it might as well be, "How much have you got?"

On the other hand here's John Jones—he has a plant and he too needs money. He goes to his banker with a disinterested appraisal of his property under one arm and a disinterested audit of his books under the other. He lays them in front of the banker and says, "I need \$50,000.00. Here are the facts about my business."

You will recall with what finesse and wealth of detail Mr. McIntyre of McIntyre & Heath, could describe the sensations experienced in the contact of the human skull with a sample of your product when put to its baser use—that of Irish confetti administered by a good pitching arm.

You may also recall his description of the same procedure when the missile comprised a large over-ripe, juicy, or as he put it, loose tomato.

There was something almost noble about the former—the brick—a finality, as it were, which left no room for argument and no necessity for explanation, while the latter—the tomato—both in the sound accompanying the contact and the results accomplished, to say nothing of the messiness incident to the proceedings, was decidedly unsatisfactory.

Any banker can and will withstand an army of John Smiths with their tomato ammunition.

It takes an exceptional one to stand up before the onslaughts of a John Jones armed with an appraisal brick in one hand and an audit brick in the other.

The use of the service and records of an appraisal organization for Federal Tax purposes is a matter which has come in for a great deal of discussion and no little misunderstanding.

"Amounts which have been expended before January 1, 1917, for the acquisition of plant, equipment, tools, patterns, furniture, fixtures or light tangible property, having a useful life extending substantially beyond the year in which the expenditure was made, and which have been charged as current expenses, may (less proper deduction for depreciation or obsolescence) be added to the surplus account—when such assets are still owned and in active use by the corporation during the taxable year."

In both cases specific reference is made to property owned and in use during the taxable year.

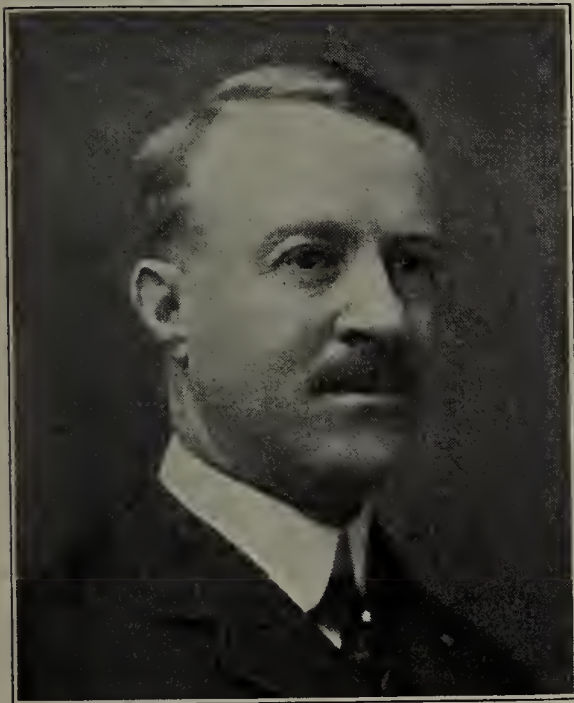
The property itself, therefore, may be and we maintain should be the basic evidence as to what corrections, if any, should be made in the Books of Account that they may correctly reflect invested capital in accordance with the regulations governing it.

The service of the appraisal organization in the gathering of this evidence comprises the listing, describing, and classifying of the property in accordance as far as possible, with their standard appraisal practice, the determining of dates of acquisition of the various units, and their pricing at actual cost.

In many cases, actual costs cannot be determined, due to incomplete records. In such cases the records and cost data of the appraisal organization is made of, and what we term normal costs, are substituted for actual costs.

Normal costs are prices known to have been paid for property of the same description as that under consideration on, or about the time it was acquired.

In such cases as normal costs are substituted for actual costs, the circumstances surrounding the case must be a matter of record, and the authenticity of the appraisal organization's records become a matter of prime importance.



W. N. Durbin, Anderson, Ind.



O. W. Dunlap, Bloomington, Ill.



A. J. Dunn, Columbus, Ohio.

An appraisal made on the basis of current market conditions—that is an appraisal showing the present value of property, cannot be used, either in arriving at invested capital or depreciation deductible from gross income.

Invested capital, as defined by the Federal Revenue Law and regulations of the Internal Revenue Department, is the actual cash or in some cases the cash value of the property at the date it was paid into the business and the paid in or earned surplus and undivided profits.

The size of a concern's accumulated surplus and undivided profits is dependent on the size of past earnings, which in turn are dependent, to a certain extent, on the accounting practices employed in computing them.

Concerns, for instance, who in years back made it a practice to depreciate their property on their books as rapidly as earnings would permit, with little regard for the actual depreciation or who had charged expenditures to expense that should have been charged to capital, have not shown the earnings on their books as have other concerns whose accounting practices were the reverse, and as a consequence the surplus and undivided profits and invested capital of the former would not compare favorably or fairly with the latter.

The Internal Revenue Department clearly recognizes this possibility of injustice and provides under Article 840, Regulation 45, that:

"Excessive depreciation heretofore charged off on property still owned and used, if it is now shown by satisfactory proof to have been excessive, and such excess is substantial in amount, whether or not disallowed by the Commissioner as a deduction from net income, may be restored to the surplus account."

Also:

With all of the property listed, priced at actual or normal cost, and summarized by years, it is possible to compare the investment as shown by the books with that as evidenced by the property itself, and determine to what extent erroneous charges of capital items to expense have been responsible for the discrepancies, and the proper adjustments made.

The remaining expectancy of life of the property and its condition, as determined through examination by a competent appraisal organization, presents the strongest possible evidence as to whether or not excessive depreciation had been charged off, and the amounts of the excesses which should properly be restored to surplus.

Some concerns have attempted, but without success, to apply their annual rate of depreciation to appraised values established during the peak price period, in order to get a higher deduction for depreciation in their income tax returns.

That is, a concern may have an investment of \$100,000 but an appraised value of \$150,000, and of course, to apply their rate of say 7 per cent against the former, would give a \$7,000 deduction, while against the latter, \$10,500.

The regulations governing depreciation distinctly forbid this procedure.

Depreciation must be based on cost, except for property acquired prior to March 1, 1913. Depreciation on property acquired prior to that date may be based on its fair market value as of that date.

That is, if a property was acquired in 1900 for \$100,000, but can be proved to have been worth \$150,000 in 1913, depreciation can be computed on the latter sum.

Here again the records and service of an appraisal organization come into important play. They frequently present the best and only available evidence of fair market value as of March 1, 1913.

The regulations governing depletion—the loss sustained through progressive exhaustion of a mineral deposit—closely parallel those governing depreciation. The cost of a property if acquired subsequent to March 1, 1913, is the sum recoverable through depletion, while the value as of that date, may be recovered if the property was acquired before that time.

As in the case of buildings and equipment, any value placed on property subject to depletion and any statement as to its progress—the periodical amount—must be capable of substantiation and must be the result of an exhaustive study of all the factors which will aid in proving it. The total quantity of the deposits at March 1, 1913, must be established and the average quality or grade, expected percentage of recovery, probable operating life, cost of production, expected selling price of the product, rate of profit commensurate with the risk royalties, sales or offers for sale of similar deposits, and many other factors frequently have to be considered in the establishment of their value.

I have only, and in a very sketchy manner, discussed a few of the uses to which appraisal service is being put.

I have told you nothing of the necessity for authoritative information as to how much of the investment in, or value of your plant, is shipped out of it with every carload of brick, or how much of it evaporates into thin air every year, whether your plant is in operation or not.

Your committee on cost accounting, if you have one, and I assume you have, has no doubt told you of the necessity for this information, and has possibly given you rule of thumb methods for estimating it, but the first step in arriving at accurate information of this sort, must be an analysis of the property itself—the determination of the investment in it or its value. An appraisal supplies this information in such manner that the depreciation, not only on the entire plant can be accurately computed, but also can that of each department, each machine, or other unit of equipment.

I have told you nothing of the use of an appraisal as a work of reference on your property. Its usefulness for planning and estimating the cost of improvements or changes, its check on your purchasing department, and the normal force against thievery and waste which it exerts.

Any one of these phases of the appraisal subject, and there are many others besides, could be made the topic for voluminous discussion, and not without profit but they all center around a truth that is fundamental. That property is a thing just as desirable and frequently more so, than money, that adequate control over it, and constant or frequent measurement of it in terms of money, is just as essential to the safe conduct of a business as is the control over cash in the bank, accounts receivable, or other so called quick assets.

That quick assets are handy things to have around no one can deny but their importance can be overemphasized.

King Midas, along about 800 B. C., was the first man to discover this. Everything he touched you will remember turned to gold. He is the first and only man whose tradition records as being completely and entirely fed up on quick assets and likewise if you remember the story, he is the only human being on record that ever grew a pair of ears closely resembling those worn by the animals I've seen hauling tram cars around some of your brick plants.

The legend and lesson of Midas was re-enacted during the war. During those days we learned that property, men and service were more valuable and more useful than money—that money was and always had been only an instrument used to measure the desirability of the really essential things of life. Our soldiers couldn't eat it. It wouldn't clothe them, house them, or carry them across the water and they couldn't use it for ammunition. It took food, clothing, ships, brick, lumber, steel and machinery—the things you list on your balance sheet as Permanent Assets. Permanent assets won the war and it is permanent assets which always have and always will win the war for industrial and social progress and quick assets are only a tool used in their creation, distribution and exchange.

The vagaries of logic used by owners of property when they argue that they can afford to spend a substantial sum of money annually on an accounting department that they may be constantly in touch with the quantity and condition of their quick assets—their currency dollars—but cannot afford to spend one tenth that sum for the same kind of information on their permanent assets—their property dollars—is a thing I have never been able to fathom but it is precisely that service which an appraisal organization renders and no plant owner can know definitely and positively just what his property comprises, where it is, what it is worth, whether it is increasing or decreasing in value, how fast and why, without it. (Applause).

The Value of an Appraisal.

Mr. Hall: If there are any questions any one desires to ask on the subject of appraisal, I will be very glad to answer same.

President Wilson: I think an appraisal is a very necessary thing. If any of you have any questions to ask Mr. Hall, now is the time.

M. E. Gregory: I have an experience I believe would be of interest. I have been in business about twenty-five years,

and a few years ago I was urged to have an appraisal made. I thought it was throwing away money, but as I look at it now I find it was not. I had one made. I found some things I had credited on my books as an asset were not considered as such, and some things I had credited low were worth very much more than I had thought. The result of the appraisal was I changed my insurance and adjusted my business. It helped in many ways, and I had the appraisal checked up a year ago. Last summer I had a fire. Part of the plant was absolutely destroyed. In looking over the contract of the Appraisal Company I found they had a clause stating they would send an appraiser in case of fire. We telephoned them for an appraiser. That very day he was there. He checked up everything, and what the depreciation was on certain things. As soon as they had made the appraisal, the adjuster came on, looked over the situation and when they found we had an appraisal, they did not have anything more to say. The fire came in the midst of a busy season and was a great shock, but in a way we were prepared. The result was, I firmly believe, we realized \$10,000 more than I would have done without an appraisal. I would say to any brickmaker, if you have not had an appraisal, have it made and made quick. Have a good company make it and put the report in your safe. The insurance adjusters came to me, eight or nine of them, we sat in a room while they went over the work, they said to me, "We have decided to allow you certain items absolutely in accordance with the appraisal; there are certain items we think should be changed." I said, "Look here, this is no Jew fire. I have paid you thousands of dollars. I expect payment from you in the same manner. I have the Appraisal Company's report, made six months before the fire, hence the values are beyond question." The result was they paid my claim in full. Therefore, I can not say enough in favor of having an appraisal made by a good, reputable concern.

Mr. Hall: That is certainly fine testimony.

L. L. Stephenson, Lovick, Ala.: I was thinking how far you would get with an income tax man with that appraisal. The value of my plant has always been kept just as small as I was able to hold it down. My banker has learned to know the value. A brickmaker hasn't anything any way and he insists on a very low estimate of valuation. We have charged off depreciation and deflation until I might as well charge off the plant now. (Laughter.) I am looking for something to charge something up to. I was just wondering from that paper if I understood I would be permitted to set up my plant investment in accordance with an appraisal and be governed accordingly.

Mr. Hall: Your plant is down on your books, as I understand it at a very low figure, due to the fact that you have made it a practice to spend practically everything for improvement, a lot of stuff that could be considered as a capital charge to be charged to expense.

Mr. Stephenson: The plant was originally built in 1901, ever since that until we commenced having to pay so much income tax, we never charged anything, scarcely, up to capital. Charged it all to expense.

Mr. Hall: In connection with that you have depreciated your plant on your books?

Mr. Stephenson: Yes, sir.

Mr. Hall: In an appraisal, those two items are taken care of. However, don't get the impression you can use an appraisal on current market conditions. In the case of a plant it is what it is that has a bearing on invested capital. What we would do would be to list all the items in the property, and list them at actual cost. We would charge items you have charged to expense to prices on the basis of actual cost, showing what your actual investment should have been every year since 1901 up to the present time. These erroneous charges of expense would be charged to your investment capital and show what the depreciation item should have been. You probably are inclined to consider depreciation as a luxury to be indulged in during prosperous years and forgotten in lean years. Depreciation is a fact, not a theory, and from the income tax theory it has got to be used. We show you

the actual cost of your property year by year and show you how on your books you can show what the depreciation should be every year.

Mr. Stephenson: If you went to dig that out of my books, you would never find it. (Laughter.)

Mr. Hall: We take it out of your property. We deal in the property itself. We come in and try to find out by the books if we can determine the date of acquisition. If it is not in the books, we find by the best data we can when it was acquired. Your superintendent may remember the date a baby was born about the time you put your boiler in, or something of that sort.

President Wilson: Do the appraisers charge for the amount of time it takes to dig it out of some men's books? If they do, there would not be any plant left by the time they got paid for their services.

Mr. Hall: Of course the charge is based on the time it takes to make the appraisal.

President Wilson: You scare some of us out before you get started.

Mr. Hall: I do not know whether I am in order, but we can make an examination of the specifications proposed and tell a man where he is going to land, what it is going to cost, before we start.

Mr. Stephenson: The income tax man takes care of that.

Mr. Gregory: Mr. Hall spoke of a co-insurance clause. I think it is unwise for brickmakers to take insurance on the co-insurance plan. We are practically fire-proof. I am very much in favor of straight insurance where part of the plant is fireproof.

President Wilson: My experience has been in going over the country and looking at plants; most of them need a fire. Not much danger of them getting a fireproof plant until they once have a fire. When they built years ago they were not thinking about fires, but thinking of the cheapest method of building a plant to turn out fireproof material for others. Most plants need a fire. Any one else a question to ask Mr. Hall, or anything further to say on this subject? It certainly was a very interesting paper. I enjoyed it very much. What is the next on the program, Mr. Randall.

Secretary Randall: You will remember we had Mr. Hanley's paper yesterday afternoon, and I am going to suggest we skip to the afternoon program now and have Mr. Raymond C. Penfield's paper on "Economical Production and Handling of Building Brick," to be illustrated by moving pictures. Mr. J. Stocke, who was to have told us about "Making Brick in St. Louis" was compelled to leave on the noon train for home, and we can have his pictures a little later. We can have Mr. Penfield's film now and the balance of the program afterward, and wind up with a demonstration on the Modern Way of Laying Brick. It will take the man ten or fifteen minutes to erect the scaffold or frame work.

President Wilson: If Mr. Penfield is ready we will hear from him.

Secretary Randall: Mr. Penfield is one of the young men of the Association. I always like to introduce the young men, and Mr. Penfield has only been a member of the Association about thirty-six years, like myself. (Applause.)

"ECONOMICAL PRODUCTION AND HANDLING OF BRICK."

R. C. Penfield, New York, N. Y.

Gentlemen of the Convention:

They have got me down on the program for a few remarks on "Economical Production and Handling of Common Brick." As a matter of fact, it is such a big subject with so many different phases that it is difficult to discuss it excepting in a general way, unless you pick out some special plant or condition in order to apply the principles of economical production to that particular case. For instance, the economical production and handling of brick would naturally divide itself into, first, the raw material; next, the manufacture of brick; next, the handling of the brick to the dryer, to the kiln; the taking from kilns to cars and delivering to the market. All that depends on the kind of brick you are going

to make, whether stiff mud or soft mud. The size of plant you are going to have, whether 50,000 or 200,000, or 500,000 per day. We have worked out pretty well the production of brick by the stiff mud process as demonstrated by the performance in Chicago. There a single unit or machine with the necessary granulator, steam shovel, pug mill, brick machine and machine for setting brick in the kiln, in handling from 250,000 to 300,000 brick per day, an average of about 3,000 brick per man employed on the plant beginning at the steam shovel and ending at the delivery of the brick on the cars. All the operations there are performed by machinery, except handling the brick from the belt to the cars. For some years we have set them mechanically in the kiln. We are now taking them out mechanically, as you will see by the pictures to be shown shortly. So much for the stiff mud brick.

When it comes to the manufacture of soft mud brick, the production of brick there for the most part was along the Hudson River, where the greatest quantity of soft mud brick are made, it runs all the way from 1,000 brick per man to 1,500 brick per man. The machine made from 25,000 per day in the open yard to 50,000 brick per day, and in a few cases a higher amount, but 50,000 is considered a good output for a soft mud machine. The hand work runs about eight times. That is, the brick are handled about eight times. They are bumped, dumped, taken to the racks and dryer, from the dryer to the kilns, set in the kilns, taken out and



H. B. Hall, Milwaukee, Wis.

put in the trucks and taken to cars or boats and again to the trucks, making from seven to eight times they are handled by manual power. Our performance is to eliminate the hand work, and introduce in the soft mud manufacture the same method of handling as in the stiff mud, which makes it necessary to mechanically hack the brick, in order to build up our units. After the units are built up it is easy to handle it into the kiln and out of the kiln and onto cars or boats, as often as you please.

This performance we are now working on and we will be able to show a motion picture of handling it in the kiln, showing the views of the hacking machine which makes it possible to pile up the units.

At the time war was declared, I remember noticing in the paper a little sentence like this: "Something has happened," referring to the declaration of war, "that will affect every human being on earth directly or indirectly." It was rather a startling statement, but I think we realize what it means today more than we did before.

We are today affected by the war, the cost of production, the cost of labor, it has changed the whole problem we have before us. In talking with the president of one of the

large steel companies of the United States recently, he made the remark, "If we make any profit in the next few years, it is going to come from our savings." They are talking about the low cost of production of brick; low cost of homes in order to increase the housing facilities, and the reduction of the cost of brick is of vital importance in order that we may meet this new demand.

In connection with the one of the points in the economical production of brick is to get the most economical power you can. Some of the manufacturers are using coal in an expensive steam plant, costing six or seven dollars per hour for the production of their power. This can be reduced by the cheaper electric power, or the use of the Diesel engine. You saw yesterday where they were producing very low cost gas, 35 cents a cubic foot.

In other words, the problem today is to reduce the cost of manufacture. In order to do that, you must eliminate hand power, hand labor, and cut down costs, buy high-grade materials, reduce the upkeep, all of which will tend to reduce the cost.

If the operator will throw the pictures on the screen, I will explain the way we propose to cut down the cost of setting soft mud brick, making it possible to set them as cheaply as stiff mud brick.

First slide is a plan we have, showing the air compressor which supplies the necessary air for operating or working the machine. This represents the hacking machine adapted to receive the brick pallets containing soft mud brick.

The brick now have run onto the machine, and the pallets are close together in the machine ready to have the brick pushed off from the pallets and preparatory to deliver them to the hacking table.

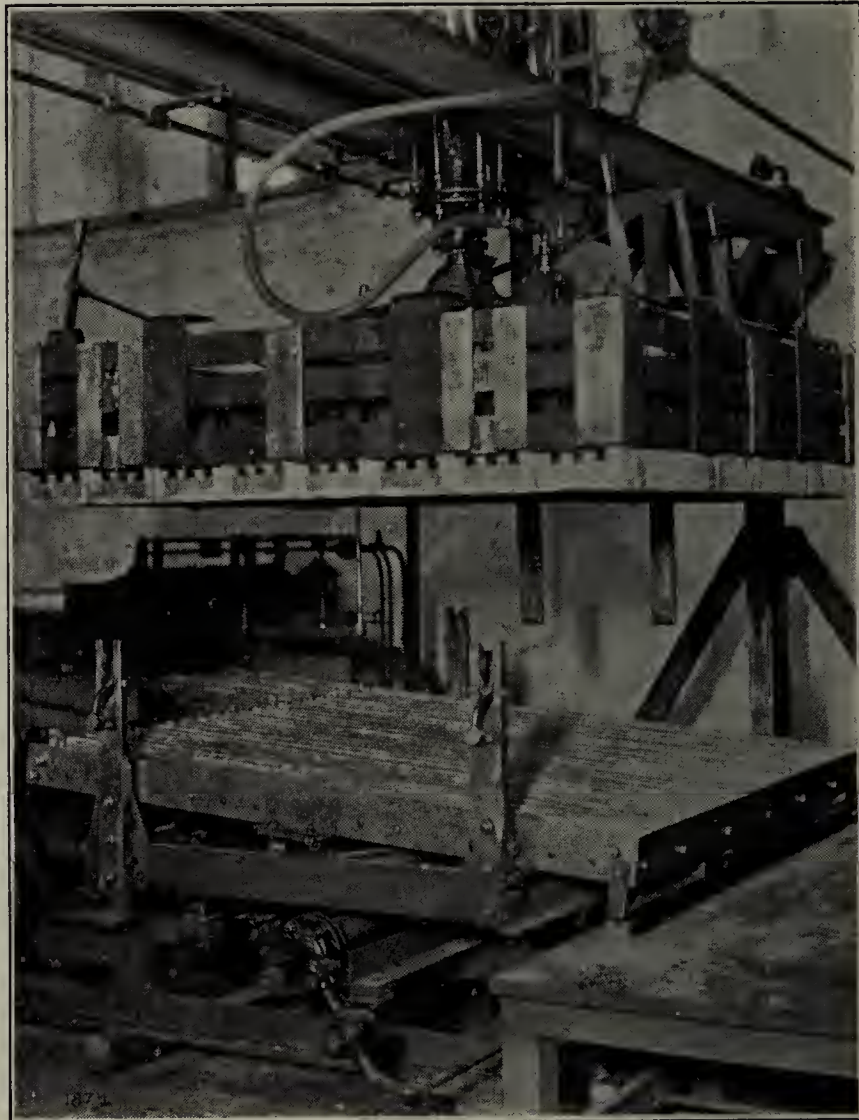
In order that you may understand the machine—if you will notice on the right hand side of the machine a number of strips which really separate the belt over which the brick are carried to the hacking table, into twelve different rows. When the machine is filled with brick, the pusher pushes these brick forward, each row of brick being dropped into its own separate channel. The brick are deposited on the belt which deposits them on the hacking table.

Next. This is a side view, showing the brick as they come forward and drop over into the little grooves down which they run to the hacking table.

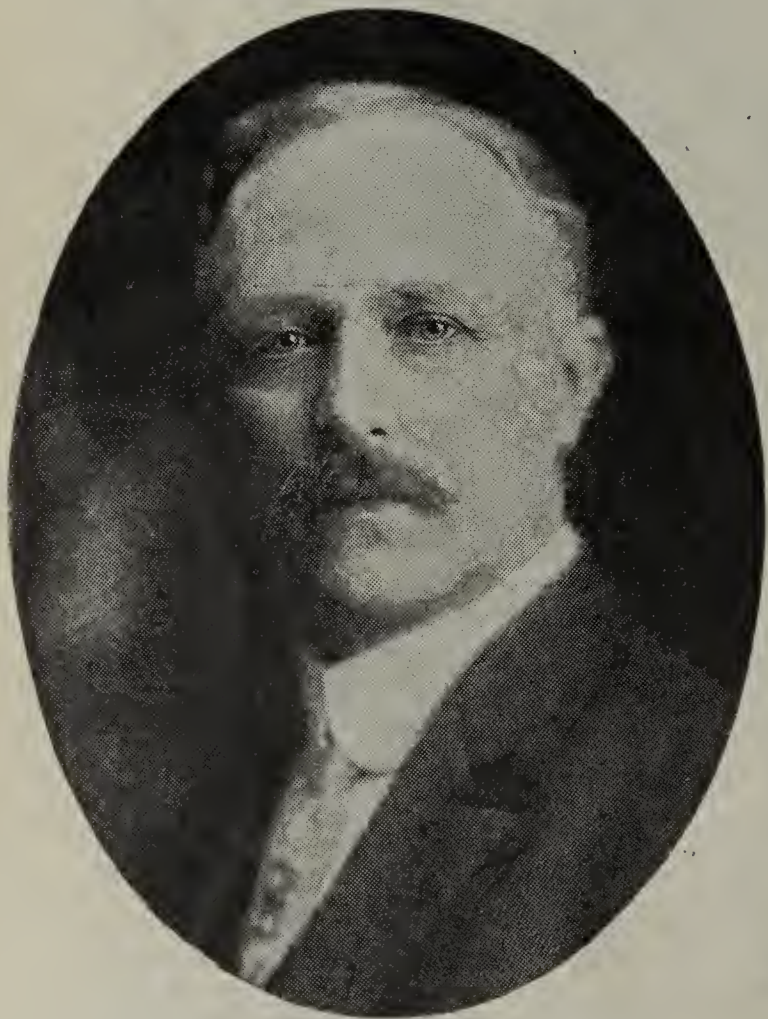
Next. You can see by this that the brick have been pushed off from the pallets and are now over and have been dropped onto the belt.

Next view. This shows the hacking table at the rear onto which the brick will pass. They drop off, each into its own particular channel.

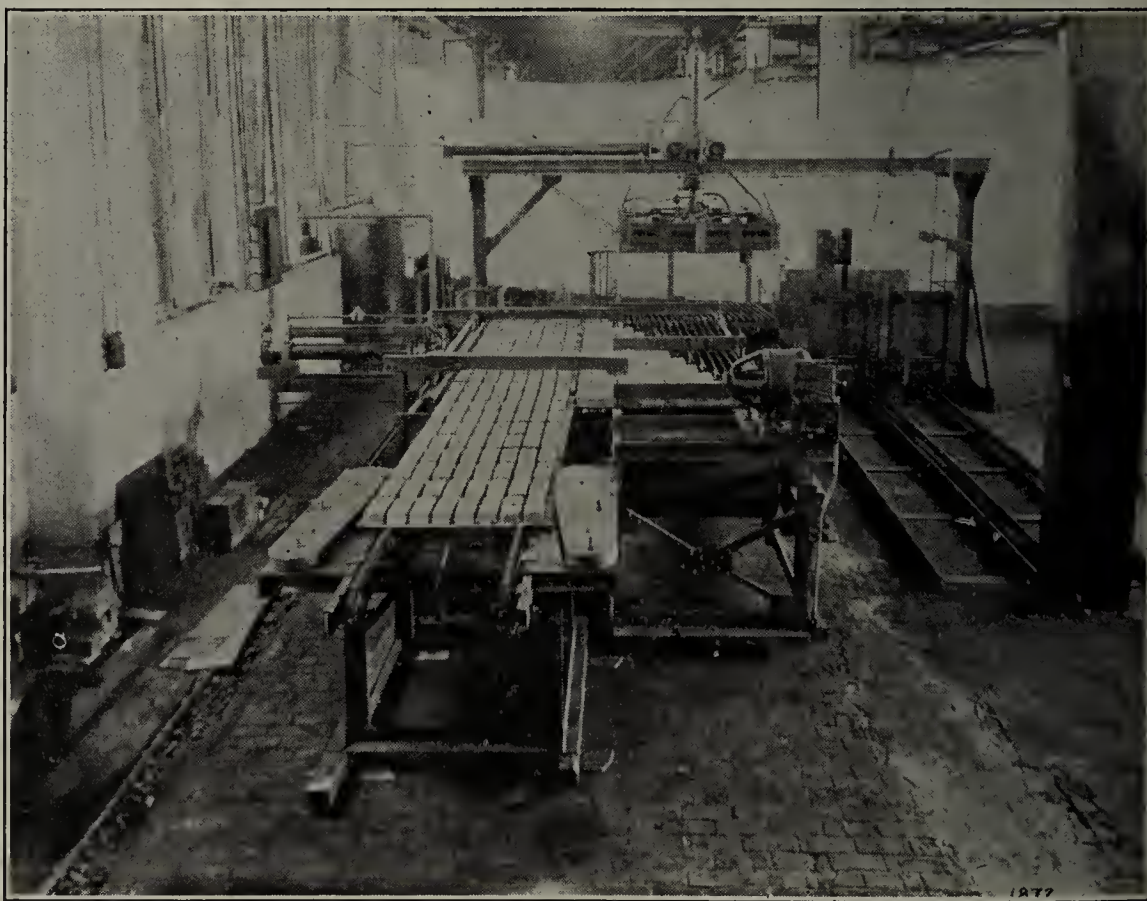
Next view. This is passed now on to the table and shows the device which determines and sets in operation the air



The Brick Lifter in Operation.



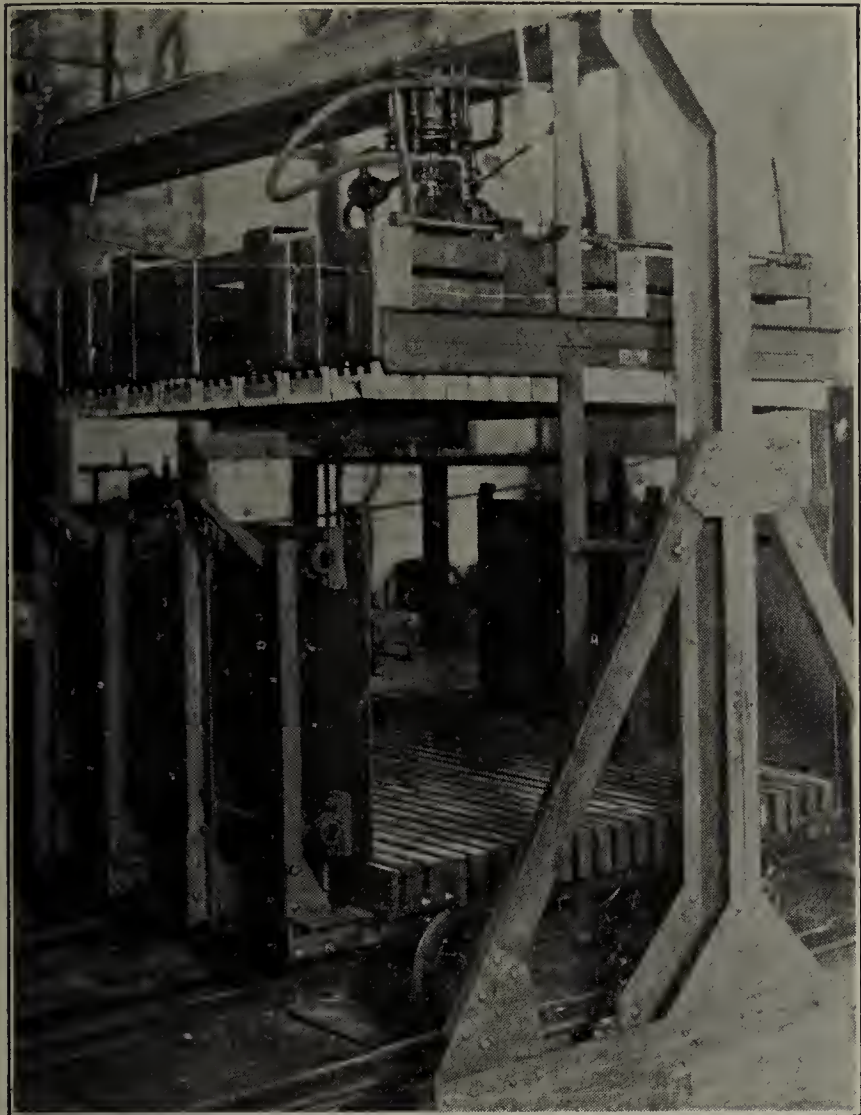
Raymond C. Penfield, New York, N. Y.



The Brick Being Assembled for the Hacking Table.

cylinder which pushes the brick off. The brick move forward, touch this lever and operate the valves.

Next view. This shows the first unit of brick which consists of twelve pallets, eight brick to the pallet. The brick have pushed off and run on down to the table; the table is prepared to receive twenty-four rows of brick, eight long. After the first brick are placed on the table, the table shifts over while the next brick come down.



The Brick Lifter Ready to Deposit Brick in Car.

Next view. In that position, the second row of brick have taken their place on the table. You will notice above the brick is the lifter which is composed of a series of steel fingers made to exactly fit in the opening between the brick, so when this lifter is dropped down on the brick, the steel fingers pass immediately between the brick and automatically the brick are grasped and the lifter comes back and over and stands in position over the groove on which the brick are to be located.

Next view. This shows the table with the lifter in position to come down and lift the brick out.

Next view. This shows the lifter in position after having picked the brick up before it goes over to the car on which the brick are to be deposited.

Next view. This shows the position of the lifter immediately over the cars on which the brick are to be placed. You will notice there are two cars side by side. The length of the unit is eight brick long and as we set three over three, the width is twenty-four brick wide. The lifter lifts the unit eight brick wide and nine feet high. The operator pushed the button, the lifter immediately goes back to the hacking table ready to take its next load.

Next view. This shows the lifter in position to place the second tier of brick on the car. The brick are open at this point and you can see the little steel fingers that hold the brick.

Next view. Now, after the unit is built as you have seen there, and passes to the kiln and are set in the kiln in the ordinary way. Possibly you have most of you seen pictures of the setting brick in kilns. Now in the film to be exhibited in a few minutes I will pass on to a description of the special brick handling locomotive crane adapted to handling brick in units, and adapted to handling or operating the machine, keeping the machine at all times level. This machine adapted to remain level and carry the load level at any point of elevation down to the bottom of the crane. This machine will pick the brick from the dock and put them on the boat, and take them from the boat and deliver them to the truck.

We will now have the film, showing the operation of placing these brick in the kiln, then mechanically placing them on the boat and from boat to truck.

These pictures were taken a few days ago at the Yard No. 5 of the Illinois Brick Co., in Chicago. They are setting as high as 250,000 brick a day of eight hours. A great many brick have been loaded by trucks from these yards located fairly near the city during the last year and the loading of the



The Brick Ready for the Lifting Device.

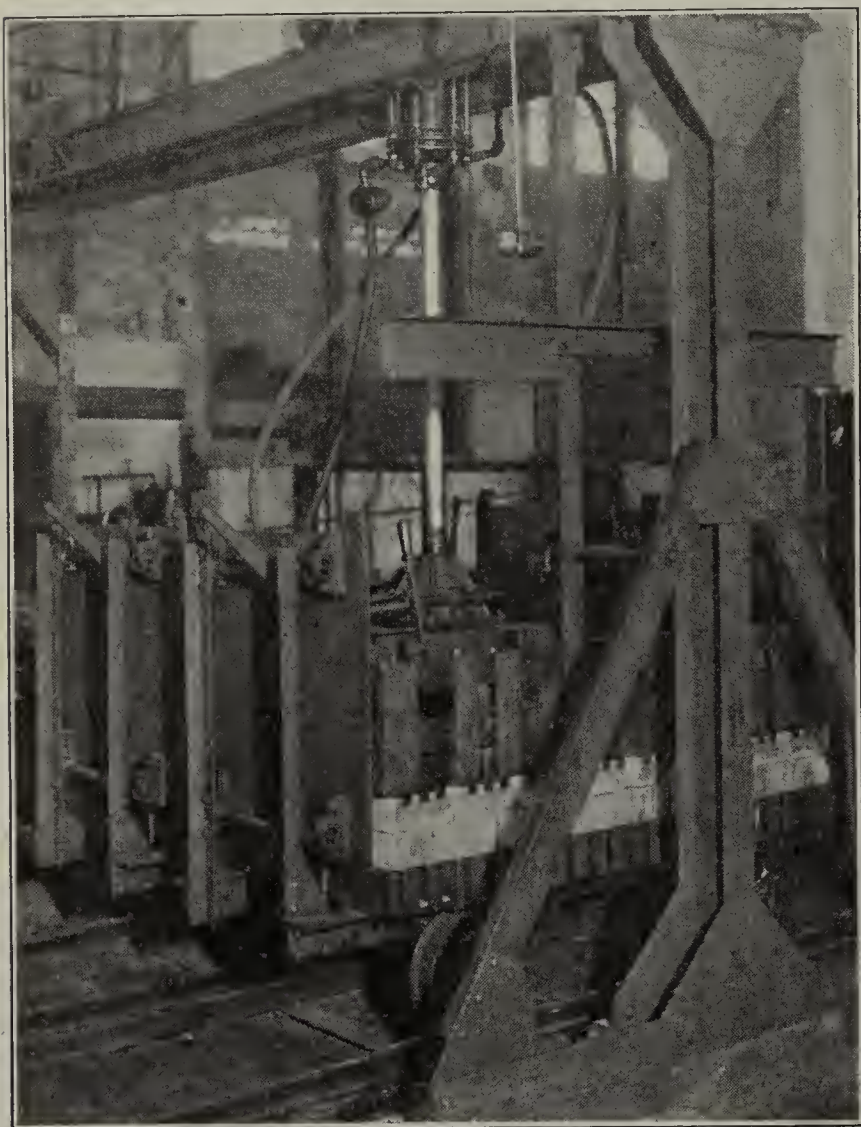


C. P. Mertens, Chicago, Ill.

units by the machine has greatly facilitated this work. It is possible for a truck to be loaded and get away in five minutes, sometimes less. That is taking the brick from the kiln as they were set and putting them directly onto the trucks. When they began loading brick by truck, taking the brick directly from the kilns, it was not very long until they began to ask to send the machine loaded brick. They found less bats in the machine loaded brick than in the hand loaded brick.

A Member: How do you keep count?

Mr. Penfield: There are so many brick in a unit, and they can readily be counted. They estimate it costs around \$3.00 an hour for a five-ton truck and the man to operate it, and if it takes half an hour to load the truck, not many times longer, it is cheaper. One truck has made eleven trips a day going over four miles to the job and back, which is a very good record, and is very much more than is ordinarily accomplished by trucks loaded by hand. In fact, it would be impossible to handle so many brick in such a way.



Setting the Brick in the Car.

This is a very imperfect illustration of the system, as it only gives you a little glance here and there at it. If you will only bear in mind in connection with the stiff mud industry in connection with the perfection of the machine for handling the brick which will be in use in Chicago this summer, there the handling of brick by man power is eliminated. In this respect every manufacturer, every department of the industry has contributed to the results that are being produced, including the steam shovel, the wonderful application of electricity, the wonderful machines, the improved methods of handling and burning by large units to make it possible to produce at low cost this very desirable building material, something so old and yet during all the years nothing has been found to replace it. But it has been necessary to cut the cost down and keep the cost down in this product if this industry is going to prosper. Cement has taken a certain part of the work away from brick. Each brick must as yet

be laid in the wall by hand. No one seems to have devised any means of laying them except by hand. It is up to the manufacturers to cut their costs and produce a good article at the lowest possible figure. I hope before another year passes to have this working by hand, at least the manual labor of handling brick by hand, methods replaced by mechanical means and doing this work in one place. It is possible to reduce by the loading machine you have seen illustrated and the means of doing that to perfection of producing a soft mud brick at a lower figure than the stiff mud brick has ever been produced under like conditions, so the production of soft mud brick in the eastern markets, where the clay is particularly adapted to it, has in my opinion, a very fair future, and if the manufacturers will improve their facilities and take advantage of the facilities offered them, brick will be produced at a much lower figure than can be produced today. (Applause.)

President Wilson: Has any one any questions they wish to ask Mr. Penfield? If so, he no doubt will be glad to answer them. We will take the next on the program, "Why is a Sewer Brick," by H. T. Shelley, Secretary-Manager of the Eastern Clay Products Association.

Secretary Randall: Mr. Shelley is connected with an organization which is paying attention to sewer brick. He had intended being here, but found he could not get away. However, he has sent his paper, which I will read for him.

Christopher Steadman: I think it would be well before we take up this next paper to give Mr. Penfield a vote of thanks for his splendid talk and the film.

John T. Hummert: I second the motion.

Carried.

WHY IS A SEWER BRICK?

H. T. Shelley, Manager Eastern Clay Products Association.

Mr. President and Gentlemen of the Convention:

The title of my paper is not of my selection, but I hope that what I say will answer this query, and answer the more logical one "Why a Sewer Not of Brick?"

Clay products are cotemporaneous with civilization. From clay tablets we have obtained the history of nations of the earliest civilization, and from clay brick and clay pipe we learn of the activities, the habits and mode of living of the peoples. All of these materials have been unearthed in excavations. Ancient cities have been uncovered, revealing ruins of structures of brick manufactured thousands of years before the Christian era and still in a state of good preservation, providing indisputable evidence of the indestructibility of burned clay at least by the agencies of decomposition and disintegration. Some of our museums contain clay products recovered after centuries of burial in the earth, apparently unaffected and as serviceable as when first used. The especial fitness of clay products for all classes of structures seems always to have been recognized, for we find them used in cities of all civilizations of all times.

With this evidence of durability it is not surprising that when drainage again became recognized as the first essential to civilization that brick was considered the proper material for drainage structures.

Durability is the one quality possessed solely by well-burned clay products. Their ability to resist the forces of decomposition and disintegration makes them favored in conduits for the conveyance of trade wastes and waste matter made up largely of harmless and frequently beneficial substances, but which during their transformation, through decomposition, to new, inert and harmless substances, form compounds dangerous to life and destructive to all other materials available for drainage.

Bricks have great strength, toughness and density. They provide an economical structure. They lend themselves to many forms of design. They provide a smooth surface and resist abrasive action.

Having a material of qualities possessed by none other, it should receive the benefit of this advantage. The best proof of the fitness of any material is its use in years of satisfactory service and assuredly brick has had these years of service. When other materials are presented for this service, practical test requirements should be available to prove their fitness or the fallacy of the claims made for them. This can be accomplished by the adoption of a specification that will be proof of the superior qualities of brick, eliminate other materials from consideration as being in the same class, and at the same time make possible the equally important selection of brick for the structures to which they are adapted and the use for which they are suited. It is just as important to properly classify brick as it is to prove its superiority over other materials, for failures disprove durability, the one quality alone characteristic of brick. Attention should also be given to the incorporation of brick into structures and both require specifications carefully drawn.

This brings me to Committee C-3 on Brick of the American Society for Testing Materials.

I have been asked by Prof. T. A. Lawson, chairman of Committee C-3, to outline the work of the committee.

The committee met at the Rensselaer Polytechnic Institute in Troy on November 30, 1921. Chairman Lawson, the representative of Committee 3 on Committee E-1, reported there was probability of the formation of a sub-committee of E-1 to study methods of making compression tests of materials.

Mr. Boyd, the representative of Committee C-3, on Committee E-8, reported the appointment of a sub-committee to define the terms, "surface clay," "fire clay" and "shale." Mr. Boyd presented a comprehensive digest of existing definitions of brick, blocks and tile. The report was turned over to the sub-committee on nomenclature for study, with instructions to submit definite recommendations covering these definitions at the meeting to be held in March.

After thorough discussion concerning the jurisdiction of C-3 over different kinds of brick a blanket resolution was passed giving authority to the chairman to appoint such sub-committees as may be required to draw specifications for different kinds of brick.

Mr. Boyd, as chairman of our sub-committee on the promotion of knowledge of brick work, reported that investigations are now in course of preparation or under way on three items: the research to determine the fire resistance of brick walls, which is being conducted at the Bureau of Standards at Washington and which is nearing completion; the research to determine the strength of brick walls, which is to be conducted by the Bureau of Standards at Pittsburgh, and about ready to start; a program is now being drawn for a research on the use of furring on brick walls. This report was accepted with thanks, and the committee continued.

Several criticisms of the tentative specifications for clay sewer brick were offered. It was suggested that the two classes of vitrified brick be eliminated and that only one class be specified, that the average absorption for vitrified brick be limited to 5 per cent as a maximum, that the section covering materials for manufacture be eliminated, that the fifth paragraph in the section on visual inspection be omitted, that the allowable depth of kiln marks be increased to one-eighth of an inch, that in the specifications a reasonable allowance in variations in dimensions be provided, that under visual inspection the wording be changed to indicate that the presence of stones, pebbles or visible grains of any material which might have a deleterious effect is prohibited, and that lime in any condition as to size be likewise prohibited. These, with several other minor changes, were referred to the sub-committee on sewer brick for consideration and report.

The secretary reported the receipt of the criticism of the form of knife edges specified for making the transverse test. This criticism applies to both the sewer brick and the building brick specification. It was decided that if Committee E-1 organizes a sub-committee on compressive tests that this sub-committee shall be requested to take over transverse tests also and to lay down the principles governing the design of these knife edges. The chair was requested to appoint a sub-committee to draw up specifications for cement brick.

Mr. Emley reported on the conference on the elimination of sizes and shapes in vitrified paving brick which was held under the auspices of the Department of Commerce in Washington on November 15, 1921. This conference recommends that the present 66 sizes and shapes of paving brick be reduced to eleven by the elimination of those sizes and shapes which are believed to be unnecessary. The committee referred this recommendation to the sub-committee on paving brick with a statement that it was the sense of the meeting that the recommendation be complied with. The conference also invited the society to accept membership in the permanent committee which will discuss from time to time the possibility of further changes in the size and shapes of paving brick. The committee recommended to the executive committee that this invitation be accepted and that Mr. Blair be appointed to represent the society.

Mr. Jackson presented several criticisms of our specifications for paving brick, namely, that the rattler loss should be different for different sizes of brick; that it would be well to consider the elimination of the large shot in the rattler charge; that the amount of loss should be measured on individual bricks rather than on the average; that it might be possible to substitute some form of impact test for the rattler; that additional information as to the value of a paving brick might be obtained from a measurement of its compression strength and absorption. These criticisms were all referred to the sub-committee on paving brick.

The chair was requested to appoint a sub-committee on clay building brick, and this sub-committee was instructed to bring in recommendations as to permissible variations in sizes.

The committee has before it a tentative specification for sewer brick. This specification has been published for some time and it is earnestly hoped that every manufacturer of brick will give it his earnest consideration and criticism. The brick manufacturer is well and ably represented on the committee and I believe a good standard specification will result.

The question of form of specification must be decided by the committee as well as designation of materials. The executive committee has decided that all materials must be considered. Do you want a combined or separate specification? Do you want your material designated as brick or clay brick in distinction from concrete or sand lime brick?

Should we have a specification for all bricks?

Should we revise the present standard specifications for brick and provide tests for service and durability, as well as for strength and density?

I should like to see the brick makers take a very lively interest in Committee C-3 and make the most of its value to brick materials. It has great influence. Its findings will be accepted generally and it should be strengthened and guided by the strong men of the brick industry. Societies writing requirements for the use of brick should be watched and misuse of brick prevented.

Our slogan should be "Clay Products for all Drainage," and our efforts directed to that end. (Applause.)

Discussion.

President Wilson: This brings us to the report of the Committee on Resolutions.

Secretary Randall: The chairman of the Committee, Mr. Julius Lucktenberg, is so modest he has sent his report up here to be read for him. Mr. Purdy, will you read it, you have a good voice.

REPORT OF COMMITTEE ON RESOLUTIONS.

Mr. President and Gentlemen of the Convention:

We, your committee on resolutions beg to submit the following:

Bureau of Mines.

Appreciating the importance of researches pertaining to most economical methods of mining and preparing the raw material used in manufacturing of ceramic products and knowing the need of studying ways and means of obtaining economies in the use of coal and gas for ceramic firings, the National Brick Manufacturers' Association, meeting in annual convention in Indianapolis, January 23-28, 1922, respectively submit the following for the consideration of the board of trustees of the Ohio State University.

Whereas, Columbus is the capital city of the state in which is produced the largest tonnage and value of clay products and;

Whereas, The State of Ohio and the Ohio State University were the first, and have continued to be the foremost in ceramic education and ceramics research, be it resolved:

First, That the board of trustees of the Ohio State University be requested to provide a site on the campus for a building in which to house the laboratories of the ceramic station of the U. S. Bureau of Mines and provide for the heat, light, water, etc., for the same, under arrangements similar to those now prevailing; and

Second, That if the board of trustees will approve, the members of the National Brick Manufacturers' Association, in so far as it is within their power, will give support to a bill before the legislative bodies of the state of Ohio for the financing of the erection and equipping of such a building and will assist in obtaining, at cost of manufacturing, all the clay structural materials needed for the building.

Co-operation in Investigation of Most Economical Methods of

John T. Hummert: I move the adoption of this resolution.

J. Post: I second the motion.

Carried.

Brick Manufacturing.

Whereas, It is necessary that brick be produced at the lowest possible cost, not detrimental to quality, and

Whereas, the investigations of the most economical methods and the most efficient equipment and processes, will be the most successfully and expeditiously made when all associations and brick manufacturers collaborate and;

Whereas, the Heavy Clay Products Division of the American Ceramic Society is engaged in such investigations, be it resolved;

First, That the National Brick Manufacturers' Association empowers its president to determine the most effective manner in which this association can collaborate in these researches and investigations and;

Second, That President of this association shall be empowered to appoint such committees as, in his judgment, will best co-operate with the Heavy Clay Products Division of the American Ceramic Society.

J. H. Chambers: I move the resolution be adopted.

R. C. Burton: Second the motion.

Carried.

IN MEMORIAM.

Whereas, Since our last meeting, death has taken from our ranks the following members:

B. C. Pierce, Taunton, Mass.; Henry B. Loveland, Jewettville, N. Y.; Bayard Phillips, Pittsburgh, Pa.; Geo. H. Tefft, Pittsburgh, Pa.; Oswald Spier, New York, N. Y., and J. C. Steele, Statesville, N. C., and

Whereas, By their death a great loss has been sustained by this association; therefore be it

Resolved, That this tribute be paid to their memory by ex-

tending to the families of the deceased the sympathy of our entire membership.

Secretary Randall: I move the adoption of this resolution by a rising vote.

Mr. Dennison: I second the motion.

Carried.

Thanks.

Whereas, This, our thirty-sixth Annual Convention, has been one of exceptional instruction derived from the number of able addresses delivered and papers read before it; and

Whereas, The pleasures of the members and visitors have been looked after in most royal fashion, we are obligated to the local Entertainment Committee for their pronounced success in making Indianapolis a lasting pleasant memory to every delegate and visitor at this convention, therefore be it

Resolved, That the sincere thanks of the National Brick Manufacturers' Association be tendered to our able secretary, Theodore A. Randall, and his friends who unitedly have contributed to make our stay in Indianapolis most pleasant; be it further

Resolved, That the earnest thanks of the delegates and guests be tendered to the management of the Claypool Hotel for the splendid convenience and service rendered during the convention; be it further

Resolved, That the sincere thanks of this association is due to all of those who have contributed papers and addresses and also to the officers who have worked so untiringly for the benefit of

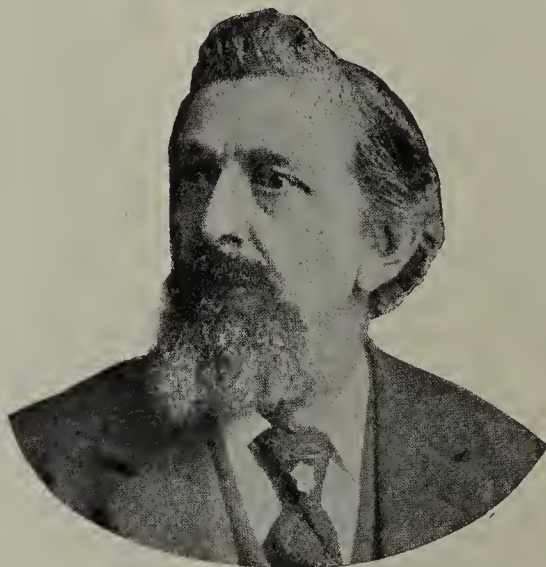
of the slides illustrating the St. Louis plants, we will have a demonstration of the practical and economical method of laying brick in the wall. It will take him a few minutes to get ready and we can show the pictures in the meantime.

We have quite a number of excellent pictures to show you, among them is a series of views of the plant of the Progress Press Brick Company. Mr. J. Stocke is down on the program to give you full particulars, but he was called back to St. Louis this morning. You have all of you seen the samples of their rough texture dry press brick which have been on display at the other end of the convention hall, also samples of their brick treated by Mr. Gates which are shown here on the table near the platform. The rough texture brick are made on a dry press machine having an attachment for the purpose invented by Mr. Stocke. The brick themselves show how effectively it works.

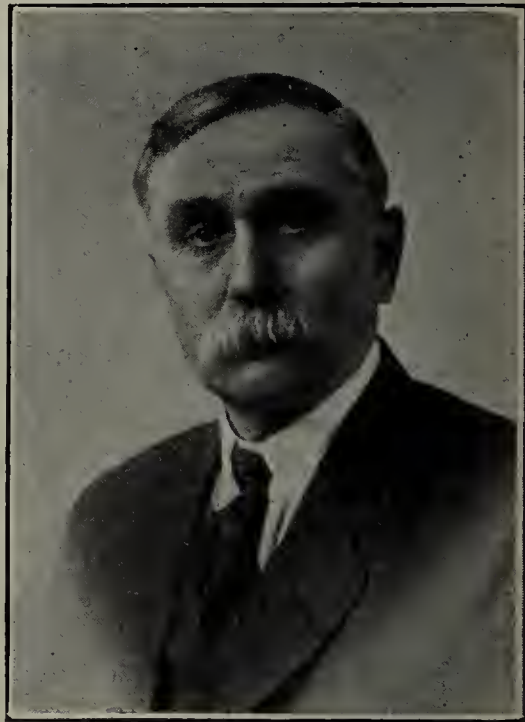
I will also show some slides of the Superior Brick Company's plant which is just across the street from that of the Progress Brick Company. Mr. Mitchell, superintendent of the Superior plant, has been here during the convention and most of you, I take it, have talked with him personally in regard to the plant and its products. He is an old time faithful member of the Association. These same views and



William C. Mitchell, St. Louis, Mo.



John T. Hummert, Quincy, Ill.



J. Fred Smith, Omaha, Neb.

our craft and which in all has made this, our thirty-sixth convention, one of the most, if not in fact, the most successful and memorable in the history of the association.

Respectfully submitted,

JULIUS LUCKTENBERG, Ohio,
WILLIAM BURGESS, Canada,
L. L. RICHARDSON, Kentucky,
L. D. WALRATH, New York,
FRANK C. ERVIN, Colorado,
J. STOCKE, JR., Missouri,
HARRY CLIPPERT, Michigan,
L. P. ISAAC, West Virginia,
J. F. REYNOLDS, Connecticut,
D. T. BUNTING, Indiana,
E. B. MERRY, Georgia,
E. H. RODGERS, Texas,

Committee on Resolutions.

Wm. Hammerschmidt: I move the adoption of the resolution.

J. Fred Schmidt: I second the motion.

Carried.

Mr. Purdy: That is all, and the report is signed by the Committee.

Secretary Randall: Mr. President, following the showing

a full description of the plant were given in the columns of the Clay-Worker last month.

We also have some pictures of the immense plant of the Alton Brick Company of which our old friend Eben Rodgers is the chief official. They also have a plant at St. Louis. "Eb" expected to be here, had his accommodations reserved at the hotel, but at the last minute found he could not leave home, so deputized his brother, E. H. Rodgers, who is making brick in El Paso, Texas, to represent the clan of Rodgers, and he has done so admirably, as most of you know.

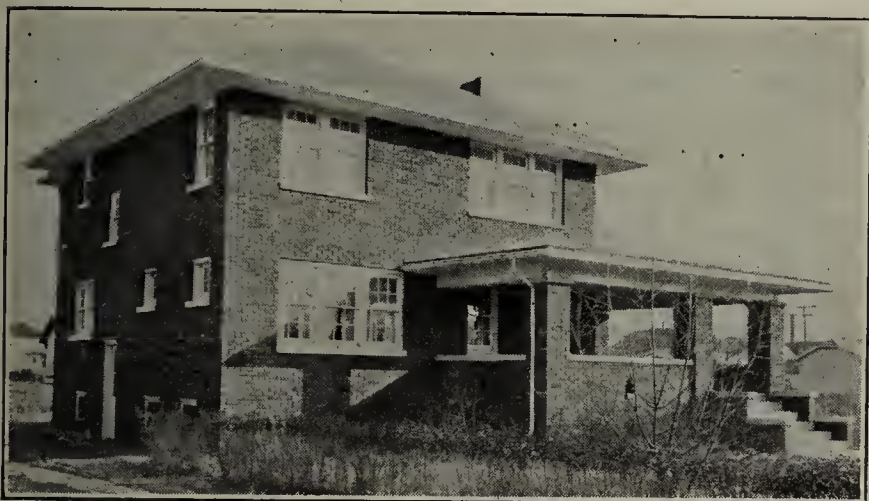
(Note. The views referred to with a full description of the plants will be given in a subsequent issue of The Clay-Worker.—Editor.)

President Wilson: Before we have this demonstration I want to say a few words. You will remember the resolution which was passed the first session. It is the one I think in which we are all vitally interested, and provided for committees to be appointed by the various organizations in the clay industry trying to get together. Just as one of the old members said today, he will spend three weeks

and \$500 in money attending conventions, whereas if we could have these conventions all at one time and one place it would only cost him half as much time and half as much money. Now, we are trying to save money. The way to save money is not to spend so much and begin now. We have the committee to represent this Association selected by our Executive Committee which we want to meet with like committees from the other associations if they will appoint them, and we believe they will, and try to arrange that by next year all the branches of this wonderful industry will meet together in some city at the same time. If we can not all meet at the same hotel, we can at least have one or two sessions where they will all meet together, and we think it will be a wonderful thing for the industry. All these various organizations will help each other. The chairman of the committee is George Clippert of Detroit, and the other members are Douglas Stevens, of Danville, Ill.; Will P. Blair, Cleveland, Ohio; R. C. Burton, Zanesville, Ohio, and Ross C. Purdy, Columbus, Ohio.

You will notice we have tried to get on this committee men representing as nearly as possible each of the organizations, and we want them to get busy right away, strike while the iron is hot. Do something now; don't forget all about it until next year or the same thing will happen again.

I want to add to what was said in the resolution about



The Brick Work on This Fine Residence Was Done With the Mann Trowel in Less Than Half the Usual Time.

the entertainment we have received here in Indianapolis. I might say of all of the conventions I have ever attended I was never entertained as I was last night. In fact as I have said before, Indianapolis has some right to be proud that they can get together such a variety and such quality of talent as was displayed last night. The Hoosier Entertainment Committee certainly did themselves proud and I don't blame them for shouting from the housetops of the greatness of the State of Indiana and the greatness of Indianapolis.

I want to thank the members for your attendance at these sessions, and for the attention which you have given us, and the courtesies you have shown me as president. I thank you. (Applause.)

Secretary Randall: I am as happy today as I was last night. We are glad you came to Indianapolis. There was a time when there was doubt in some quarters, not here in Indianapolis, about whether this would be a successful convention; that doubt has been dispelled. It has not been so great in numbers as some of our previous meetings. If we had five or six hundred men in attendance and none of them much interested in the sessions, we would not have a good convention, but with nearly three hundred registered, nearly all of whom have shown an active interest, the convention has been one of the best in the history of the Association. I remember well one convention we had with about seven hundred in attendance and we could not get more than fifty or sixty into the convention sessions at any one time to save our necks. For a time it looked as if the convention would be a flat failure and we had over six hundred people

registered. This year we have accomplished things. We have done more in a constructive line than we have in a number of years. If this demonstration of bricklaying is as practical as it seems, it means an opening of a new market in the rural districts. I want to thank you all for coming, we have enjoyed it more than you have. It will not be very long until we will again invite the convention to come to Indianapolis. (Applause.)

President Wilson: I happen to be an officer in the Common Brick Manufacturers' Association, and I want to extend to you all an invitation to come to St. Louis next week. Mr. Stoddard is here and he asked me to say to you if you wanted to engage reservations at the hotel for next week he will be glad to take care of you. They have a great surprise—"Mystery No. 3" I think they call it—and you will be interested in it, just as you have been interested in many things which have happened here. I hope you will all go to St. Louis. The sessions start Monday and last three days, and no doubt the people of St. Louis will show you a good time. They may not come up to Indianapolis, but they will try to make you believe they do any way. Mr. Stoddard, have you something to say this morning?

Mr. Stoddard: It has been reported that some one has said there was nothing in the Ideal Wall. I want to say to you men, come to St. Louis Monday and Tuesday and Wednesday, we will show you the greatest development that has ever taken place in the period of one year. I claim that The Ideal Wall is an absolute success.

Secretary Randall: I would like to ask George Potts to come up here for a minute. I want to introduce George Potts to this convention. He is one of the Hoosier Entertainment Committee that has enabled us to handle the convention this week as we have. He says he don't care how often you come back to Indianapolis. (Applause.)

George Potts: Come any time, you will always be welcome.

President Wilson: A motion to adjourn will be in order and then we can gather closer and see this bricklaying demonstration.

Mr. Gregory: I move we adjourn.

Mr. Penfield: Second the motion.

Carried.

Following adjournment Mr. O. F. Mann, inventor of the improved trowel, demonstrated to the satisfaction of all present that brick can be laid more speedily with it than by the old method. A temporary frame work was erected and a specimen wall laid, as pictured and described on page 129 of the February fifteenth issue of The Clay-Worker. The young man who did the work is not an experienced bricklayer, but he laid up the wall shown in about thirty minutes, and it was generally conceded that by the ordinary method an expert bricklayer would have taken two to three times that long to have laid up a similar wall. The job represented the ordinary veneered wall, but of course the trowel can be used on any ordinary job of brick work. Mr. Mann is living in a two story brick house, see accompanying photograph, erected with the new trowel and he figures the job was done in much less than half the time it would have taken skilled bricklayers to have done the same work with the old style trowel.

THE N. B. M. A. BANQUET.

One of the guests said to Toastmaster Beveridge at the close of the banquet, "I want to thank you for the very clever part you have played in the evening's entertainment. I have attended many banquets, but never have I enjoyed myself at one as I have tonight." That was a pretty compliment and seemed to voice the sentiment of every one present. The Hoosier Committee did themselves proud, as did each and every one of the speakers. The proceedings which will be published in full in the March issue of The Clay-Worker will be a real treat to all of our readers. Those who were not and those who were present will find in the printed page a most interesting account of a wonderful evening's entertainment.

CONVENTION ECHOES.

As Delegate Number One Saw It.

Dear Teddy:

Have been intending to write you for several days to tell you that I had such a fine time at the N. B. M. A. Convention in Indianapolis and think that every one else did.* I was afraid that the C. B. M. A. folks might draw away some of our old friends, but much to my surprise the old-time folks, the old reliable brickmakers were all there and some others also. I think that the old N. B. M. A. is still holding its own and will continue to do so and grow some more under the guidance of our able secretary.

Sorry Mrs. Randall was not feeling as well as usual. We all love her and dislike to miss her at the dinner, etc.

With my love and kind regards to you both, I remain,

Yours truly,

Philadelphia, Feb. 3, 1922.

WM. CONWAY.

The Best Papers Ever Listened To.

Dear Mr. Randall:

I surely enjoyed the Convention. I have attended quite a number at various places, and I believe the papers that were read and the various subjects discussed at this Convention were the best that I ever listened to.

Also the different forms of entertainment provided by the the Indianapolis Entertainment Committee were fine. The speeches at the banquet were high class and you and your co-workers are to be congratulated upon the whole affair.

Sincerely yours,

Connersville, Ind.

GEORGE M. FRIES.

Now Knows He Missed a Good Time.

Secretary Randall:

I was unable to attend the convention in your city. Was sorry then and now I am more so, for a friend of ours, a brickmaker from Texas, who came to Milwaukee to see us after attending the N. B. M. A. meeting in Indianapolis, told us it was the best, the most instructive and constructive meeting he ever attended. That certainly is a fine compliment, and he told us more about the fine time he had at your banquet and other entertainments. You deserve your success and I wish you many more years, of prosperity.

Yours very truly,

FREDERICK C. BOGK,

President Ricketson Mineral Paint Works.

Milwaukee, Wis.

A Natural Born Optimist Enjoys Convention.

Dear Mr. Randall:

The writer is perhaps an optimist by nature—and for that reason always enjoys the brick conventions. Some people worry anyway—they worry about the future of the church, the future of their country, and the future of their business. Perhaps they get some enjoyment out of it—but I don't. I feel that I belong to the right church, am a citizen of the right country, and that there is no better business than the one I am in—the manufacture and sale of brick. That, perhaps, accounts for the pleasure which I find in attending conventions, and particularly the N. B. M. A. meeting at Indianapolis, for I always come home a little more optimistic than when I start out.

Our firm is always busy and our plant running. We try all the time to be prepared for the opportunity that is coming. The opportunity has never disappointed us in coming—and we would like to think we never disappointed the opportunity by not being prepared when it came. The beginning of every

year looks good to the writer, and it may be 1922 looks better than all its predecessors. Anyway we shall try to make it the best and I have no doubt about making it come true.

Yours very truly,

Buffalo, N. Y.

L. D. WALRATH.

Enjoyed Convention From Educational and Recreative Standpoint.

Dear Mr. Randall:

The N. B. M. A. convention, just recently adjourned, was of much value to the writer, both from an educational and recreative standpoint.

I congratulate you on the good program that you provided.

In the past year we have made some interesting developments in die construction and I will endeavor in the near future to supply your paper with a description which I am sure will be of interest to the trade.

Very truly yours,

GEORGE W. DENISON,

Cleveland, Ohio.

The Ohio Clay Co.

Younger Members Taking Interest in Convention Work.

Dear Randall:

Just to let you know that I enjoyed my trip to the N. B. M. A. convention at Indianapolis this year. The roster of membership was not as large as at some previous conventions, but it seemed those who were there took an active interest in the program. The sessions were well attended. The most pleasing feature, to the old-timers, was the interest the younger members took in our discussions and deliberations. The most gratifying feature of the convention was perhaps the general spirit of good fellowship and personal friendship. It seemed as if the members had come to renew old and form new acquaintances. It was a round of introductions and pleasant chats in quiet corners, that undoubtedly accomplished more solid missionary work and laid deeper foundations for the future success of our noble organization than did the work of the convention—as important and satisfactory as this was in every respect.

I can not close without begging leave to state that while not forgetting that our organization has been most royally entertained in other cities during our past gatherings, I can not but pause and reflect upon the courtesy shown us by the members of Indianapolis. I can but feelingly say:

In other streets we oft' have wandered,

In other halls we've often met;

Other friends have been true and warm hearted,

But like here we have never found yet.

The last drop sometimes dries the river,

The soul and body may part,

But forget thee, O Indianapolis, no never,

Nor the brothers who captured our heart.

Yours very truly,

Quincy, Ill.

JOHN T. HUMMERT.

NEW LABOR-SAVING DEVICE PERFECTED BY WELLER MANUFACTURING COMPANY.

The Weller Manufacturing Company, Chicago, Ill., manufacturers of conveying machinery of all kinds, has perfected a Portable Reciprocating Feeder to take care of the materials received in hopper bottom cars. This feeder eliminates the digging of pits, and cars can be unloaded at a point most convenient to where the materials are required. This machine operates above the track and handles sand, stone, gravel, coal, ore, etc., saving the labor of several men. One man can easily handle the job of unloading and delivering the materials to any style of loader or elevator. It is mounted on roller bearings and can be easily slipped under the car. A

motor or engine is mounted on platform, making it a complete unit. There are no complicated parts to get out of order. Blue-prints showing construction will be sent on application.

WITH THE HOLLOW BUILDING TILE DIVISION

Officers and directors of the Hollow Building Tile Association for 1922:

Officers.

President, J. T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.

Vice-President, William Hutton, Jr., Troy Fire Proofing Co., Troy, N. Y.

Secretary-Treasurer, E. R. Sturtevant, Conway Bldg., Chicago, Ill.

Board of Directors.

J. J. Amos, Humboldt Brick Manufacturing Co., Humboldt, Kansas.

F. F. Anness, Anness & Potter Fire Clay Company, Woodbridge, New Jersey.

J. A. Dailey, Shale Hill Brick & Tile Co., Chillicothe, Mo.

H. C. Downer, Malvern Fire Clay Co., Malvern, Ohio.

Robert Gamble, Gamble & Stockton Company, Jacksonville, Florida.

F. R. Hale, Vigo-American Clay Company, Terre Haute, Indiana.

J. T. Howington, Coral Ridge Clay Products Co., Louisville, Ky.

Wm. Hutton, Jr., Troy Fire Proofing Co., Troy, N. Y.

H. M. Keasbey, National Fire Proofing Co., New York City.

S. D. Knight, Kankakee Tile & Brick Company, Kankakee, Illinois.

T. J. Neiswanger, Standard Clay Products Co., Oskaloosa, Iowa.

J. H. Payne, Fraser Brick Co., Dallas, Texas.

H. R. Straight, Adel Clay Products Co., Adel, Iowa.

R. G. Wallace, National Fire Proofing Co., Pittsburgh, Pa.

IF THE PAPERS and discussions at the recent annual gathering of the Hollow Building Tile Association are a key to what the Hollow Building Tile folks are thinking about and doing it indicates that they are concerning themselves with advertising, and following through with salesmanship and merchandising ideas to increase the volume of sales, and are concerning themselves with ways and means to reduce cost so as to increase the possible profit returns from the business.

Meantime while these touch particularly the commercial end there is a carrying on of fire test work and of research work to tabulate and standardize facts and practices in the industry which will contribute to the better quality of their product and better manufacturing methods at lower cost.

Retiring President H. M. Keasbey, of the National Fire Proofing Co., New York City, made a splendid suggestion in his annual report when he said that the industry should strive to reduce manufacturing costs, because that is their chance for profits. He pointed out that manufacturing cost depended some upon volume and if they can increase the volume of business it increases the opportunities to reduce cost. Reading between the lines, however, one feels that he believes that there are opportunities to economize in production by better methods and new ideas, and plainly this is the way toward better profits.

Secretary Sturtevant's annual report showed the Hollow Building Tile Association carrying advertising space in 36 publications including architectural and building publications, household and general magazines, farm publications and en-

gineering publications. The number of inquiries received during the year showed that their advertising has been effectively handled and well placed.

In the matter of advertising and following through after the advertising with merchandising effort, J. C. Williams, of Critchfield & Co., the advertising firm handling their work, made a splendid talk at the annual gathering in which he emphasized the importance of following through. He says the interest awakened by advertising must be followed through with sales and merchandising work or else the full results are not accomplished. Inquiries themselves are of but little avail unless the prospect is followed up intelligently and industrially until the sale is made and stock is delivered.

One of the points he made worthy of special attention right now is the necessity for each manufacturer going after business in his own territory with vim and determination because each developing more business in his own territory not only means a greater business on the whole, but it means less of that sharp and ruinous competition in the open market field.

One of the studies carried on actively during the year was that of the fire resistant qualities of hollow building tile. There was a report of the work which had been done at the Bureau of Standards by P. H. Bevier, of the National Fire Proofing Co., New York, in the course of which he illustrated with picture slides the test work carried on. This it seems, was not only an interesting feature of the annual gathering, but it helped to strengthen the confidence of manufacturers in the fireproofing qualities of the hollow tile products. The Hollow Building Tile Association has been actively co-operating with the Bureau of Standards at Washington in this work for nearly two years now, with Harry D. Foster employed as research associate of the Bureau to conduct a systematic study of hollow building tile.

Secretary Sturtevant's report shows that the Engineering Department of the Association, acting under the supervision and direction of the Standards Committee, has been very active in promoting a greater use of hollow building tile. Also that during last year there developed greater activity on the part of many cities in revising building codes and the Engineering Department has been in close touch with code officials in many of the important cities of the country who are doing some good and effective work. Secretary Sturtevant reviews in some details the specific progress being made in Chicago, Buffalo, Baltimore and a number of other important cities in the development of new codes which help to encourage a wider use of hollow building tile. Incidentally mention is made that early in the year Secretary Herbert Hoover appointed a committee, headed by Ira M. Woolson, to study the problem of building codes and to develop a standard code which could be used as a model by all the cities in the country. The Hollow Building Tile Association is represented on the Advisory Committee and a preliminary draft of the Hoover code is expected at any time.

On the commercial side the association is also developing a wider interest and a closer hook up with dealers and organizations of dealers. It has been sending out moving picture reels and literature and expects during the year to extend this work with dealers materially and develop a permanent and well defined hook-up for the more intensive promotion of hollow building tile in individual communities.

What is regarded as perhaps the most striking and important activity entered into during the year has been in the inauguration of the work of the joint research committee.

Through the efforts of the Plant Operations Committee of the Hollow Building Tile Association three other branches of the heavy clay products industry have joined with this asso-

ciation in the formation of a joint research committee for an intensive study of plant operating problems.

Arrangements have been made with the Bureau of Mines and Bureau of Standards for the conduct of work and it is now progressing nicely. A report on the work accomplished so far by the joint research council was made by R. T. Stull of the Bureau of Mines, Columbus, Ohio, at the annual meeting.

After pointing out that four national associations, the Hollow Building Tile Association, Common Brick Association, the Face Brick Association, and the Paving Brick Association, have provided a joint fund for the investigation of problems common to all industries he went into some details of work that had already been done.

They visited a number of plants where they have conducted studies, made tests and compiled records and are continuing this good work equipped now with special car for the purpose.

They found difficulty at times in getting lodgings and to solve this problem they secured one of the Pullman cars of the Bureau of Mines and fitted it up as a dining and sleeping car which can be taken with them from place to place and put on a siding wherever they are carrying on their investigations.

This work, it is thought, constitutes one of the most important steps so far taken in the clayworking industry, which promises to result in a lot of valuable data that will not only insure progress in the clayworking industry but it will put the knowledge of this progress on a positive basis so that it will be of distinct value to all members of the industry.

From the reports made at the annual meeting of the Hollow Building Tile Association, and from the work under way, the indications are that the members of this organization are to have a busy year and that there will be interesting developments both in extending the use of hollow building tile and in developing wider and better knowledge of the building by those engaged in the work.

FRANKS H. ROBINSON ACQUIRES MECHANICAL EQUIPMENT OF CERAMIC ENGINEERING COMPANY.

As will be seen by the announcement on page 301 of this issue, W. D. Richardson, President of the Ceramic Engineering Company, Columbus, Ohio, has sold his mechanical equipment, including patterns, drawings and machine patents, to Frank H. Robinson, of Pittsburgh, Pa., the well-known manufacturer of dryer cars and other clayworking equipment. With this addition to his line of brickyard equipment and supplies, Mr. Robinson will be in a position to supply an improved line of cars, conveyors and other equipment, particularly such as is required for tunnel kilns, etc. For further particulars, address Frank H. Robinson, whose ad appears on the back cover page.

JOSEPH L. BUCKLEY GETS BACK IN THE BRICK GAME.

Frank K. Rhoads is president of the Tri-City Brick Company, which has taken over the Argillo works of Carbon Cliff. The board of directors named Carl J. Mueller, Rock Island, Vice-President; Joseph L. Buckley, Rock Island, Secretary, and C. A. Beers, President of the First Trust and Savings Bank, Treasurer. Other directors are H. O. Binyon, Treasurer of the S. S. Kimble Brick Company, Chicago; Fred T. Myers, Rock Island, and C. F. Drury, Davenport. The works will be enlarged and new machinery added. The product will be changed from drain tile to the manufacture of artistic face brick, hollow brick and hollow building blocks.

The output of the new concern will be 15,000,000 brick a year.

Joseph L. Buckley, the Secretary, will also be the General Manager of the plant. Mr. Buckley, who is a practical brick man of many years' experience, has for the past few years been identified with the Proctor & Schwartz Company, having charge of the Pittsburg office. The headquarters of the Tri-City Company will be in the Robinson Building, Rock Island. The plant has been overhauled, new machinery and equipment installed, and Mr. Buckley writes he expects to have the plant in operation early in March.

THE NEW ENGLAND SITUATION.



HERE IS at present more activity being shown in this section than has been seen for some months past. Contracts are actually being closed with the result that the totals are mounting up into seven figures. During the past two or three weeks there has been an improvement that is very marked. When comparing the figures of 1920 with those for 1921 they average nearly four times as much. The last month of 1921 showed contracts awarded totaling well into eight figures.

Around the Boston center the volume of work reaches such proportions as to make the figures of one year ago look very small. This center has been more or less active for quite a period and bids well to continue until the elements of winter gather in such proportions as to prohibit work for a time.

Taking the year's figures for this section as a basis the month of December totals show up with one-twelfth of the year's total. This amounted to very close to \$25,000,000, while the month of December closed with a figure amounting very close to \$2,600,000. This would indicate an unusual amount of activity for that period of the year. Usually December is the month in which dealers figure up their year's work and begin laying plans for the new year.

Other building centers throughout this section can show gains and the comparisons are just as great though the figures are somewhat changed. Totals do not compare in size, but the proportionate gains are just as large. Springfield, with a total of \$300,000 for December, 1921, compared with December, 1920, with \$120,000, shows a gain of almost three times as much work. These figures while not up to the larger centers cited compare favorably for its size. One gets the impression that other places are actually working, which

Prices of the various materials are approximately at the same levels. The law of supply and demand has a part to play and does to a greater or less extent. In the Boston center common brick is quoted at around \$17 on the job. New York selections are in the neighborhood of \$1 more, with this figure varying to some extent, and this may vary a few cents more or less again. Connecticut commons are \$20 delivered. Some brokers get a dollar or two more, but the average stays very close to the figure quoted. Selected water struck stock brings from \$30 to \$33 at the job.

In the Providence center commons are moving out at \$24 with some slight variation in price. Inferior quality commons are as low as \$20. Water struck brick in this district are quoted at \$35 in most cases. Good quality face brick in the smooth and rough textures are quoted at a range of price. Some get \$50, while others are receiving \$60 for the same brick, depending, in some cases, upon quality and quantity. Hollow tile in the 4-inch size is quoted at around 17 cents delivered; with 8-inch material at 27 cents per square foot. This covers both the rough two sides and the smooth two sides. Structural tile in proportion to its quantity and size.

Hollow tile in the Boston section is at a low level at the

present time in carload lots quoted on 4-inch at 9 and a fraction cents. The fraction is variable. Eight-inch is marked at around 18 cents with 12-inch at 25 cents a square foot. Heavy web material for bearing partitions and code requirement are marked in proportion, varying with quantity and stocks.

It is reported that a new concern has been organized in Portland, Me., to be known as the Tile Shop, Inc., with a capitalization of \$10,000. This new company proposes to manufacture tiles, mosaics and terrazzo flooring. The officers are Martha C. Frey, president; George Frey, treasurer and clerk, and Mr. John Tuebe, all of Portland.

Berlin, Conn., claims to be shipping fifteen carloads of brick a day, most of them going to New York and vicinity, with some reaching the Central Atlantic States. This speaks well for Berlin.

NORTHEAST.

SENATOR CHARLES A. RAWSON.

We are glad to chronicle a big event in the life of a staunch Iowan clay products manufacturer—Charles A. Rawson of Des Moines—who was recently appointed by Governor S. E. Kendall to fill out the unexpired term of United States Senator William S. Kenyon. We congratulate Mr. Rawson on the honor which has come to him, but we feel the people



Senator Charles A. Rawson, Des Moines, Iowa.

of Iowa are also to be congratulated on having such a high type of man as Mr. Rawson to represent them at Washington. Mr. Rawson was chairman of the Republican State Central Committee, and his appointment comes as a recognition of faithful service. Mr. Rawson has been identified with the clayworking industry nearly all of his life, and is now president of the Iowa Pipe & Tile Co., Des Moines, and the Eldora Pipe & Tile Co., Eldora, Iowa, and vice-president of the Des Moines Brick & Tile Company. He has served as president of the Iowa Brick & Tile Association and is an old-time member of the National Brick Manufacturers' Association. He is also a director of the Des Moines National Bank and is identified with a number of insurance and trust companies. His friends in the clayworking industry are legion and we know they all join with us in hearty congratulations and good wishes.

PLANS TO HANDLE BEST YEARS BUSINESS.

The International Brick Company, El Paso, Tex., is planning to handle its greatest business during the ensuing year, according to Jerry F. Driscoll, general manager. Of the 14,000,000 brick manufactured by the International Brick Company during 1921, 75 per cent was used in El Paso buildings,

20 per cent was shipped to Arizona, New Mexico and West Texas points, while the remaining 5 per cent was consigned to points in Mexico north of Chihuahua City. Mr. Driscoll said he looked forward to a general resumption of building activities in the near future, basing his expectations upon information obtained through conversation with leading contractors and builders of El Paso and other southwestern cities.

A BRICK MAKER EDITOR.

One of the busiest brick manufacturers in Ohio, F. A. Hoiles, president and general manager of the Alliance Brick Co., is also the owner, publisher and editor of two local papers, one at Alliance and one at Lorain, and as time is hanging heavy on his hands he recently purchased a third, the Mansfield News. If business lags and our friend Hoiles gets restless for want of something to do he may emulate the illustrious example of President Harding and run for Congress. When he does, we are for him.

THE STANDARD CHIMNEY ORDINANCE.

The Standard Chimney ordinance has been completed, and sent out in pamphlet form by the National Board of Fire Underwriters, and it is a good ordinance that every clayworker should study and keep on hand for reference. And in the preparation of it, Ira H. Woolson, consulting engineer of the Board has performed a splendid service. It will be recalled that he discussed this and the matter of flue linings at the 1921 N. B. M. A. meeting. His discussion then and his work since has helped materially in putting specifications in definite form. It is a good work that should put us in position to eliminate that fire loss of the country due to defective flues, and if pushed right it should profit the clay working industry as well as benefit the general public.

MANY GUESTS PRESENT AT SALMEN-SULLIVAN WEDDING.

A wedding of more than passing interest to brick manufacturers generally, and members of the N. B. M. A. in particular, took place at Slidell, La., January 27, when Miss Ella Salmen, only daughter of Mr. and Mrs. Fritz Salmen, was married to Colonel William H. Sullivan, of Bogalusa, La. As is well known, Mr. Salmen is one of the largest brick and lumber men in the South, and Colonel Sullivan, who is mayor of Bogalusa, is at the head of immense lumber interests, and this added to the fact that Miss Salmen was one of the prettiest and most popular girls in that section, made the event the largest occasion of the sort not only in Louisiana, but the South. Something like 5,000 invitations were issued and it was estimated about 4,000 people were in attendance. An immense tent was erected over the greater part of the Salmen grounds and the ceremony took place on the front portico of the house. Miss Salmen was a beautiful bride and if the good wishes of her many friends count, none but happy days are in store for Mr. and Mrs. Sullivan. The wedding gifts which came from all over the United States were valued at close to \$100,000. The happy couple left the next day for an extended western trip.

Fred Salmen, brother of the bride, and the hustling manager of the New Orleans branch of the Salmen Brick & Lumber Company, took advantage of the occasion to announce his engagement to a popular New Orleans girl, the wedding to take place some time in March.

AMERICAN CERAMIC SOCIETY MEETING.

Featured by Large Attendance, Interesting Program, Trips of Inspection and Delightful Social Events.

THE TWENTY-FOURTH ANNUAL convention of the American Ceramic Society was held at St. Louis, Mo., in the Hotel Statler, February 27 to March 1, inclusive. There was a great gathering of the ceramic clan, over 300, who came to participate in the general sessions and the divisional meetings, in which they were especially interested.

The general sessions covering the routine of business of the entire society, and papers and discussions of interest to the ceramists generally were held Monday morning and afternoon and Wednesday afternoon.

Divisional meetings were held in special private rooms where the members interested for the most part in only one phase of the organization work would not be disturbed or forced to listen to the papers and discussions containing little of value to them in their branch of the industry. Separate rooms were turned over to each of the following divisions, Art, Enamel, Clay, Heavy Clay Products, Refractories, Terra

President Pence then read his address in which he reviewed the work accomplished during the past year and made many valuable suggestions as to the future needs and requirements of the society if it hopes to keep pace with work done in the past and maintain its present well recognized high standard of efficiency. He predicted still further growth and achievement in the year to come.

Of particular importance in the reports of the several standing committees, the activities of the Membership Committee held most of interest. This committee reported the society now numbers 1,615 members of which 1,462 are individual members, 153 corporation members, 3 honorary members and 2 life members. There was a net gain of 234 individual members and 48 corporation members.

The financial condition of the society was reported by Treasurer R. K. Hursh of Urbana, Ill., as quite satisfactory.

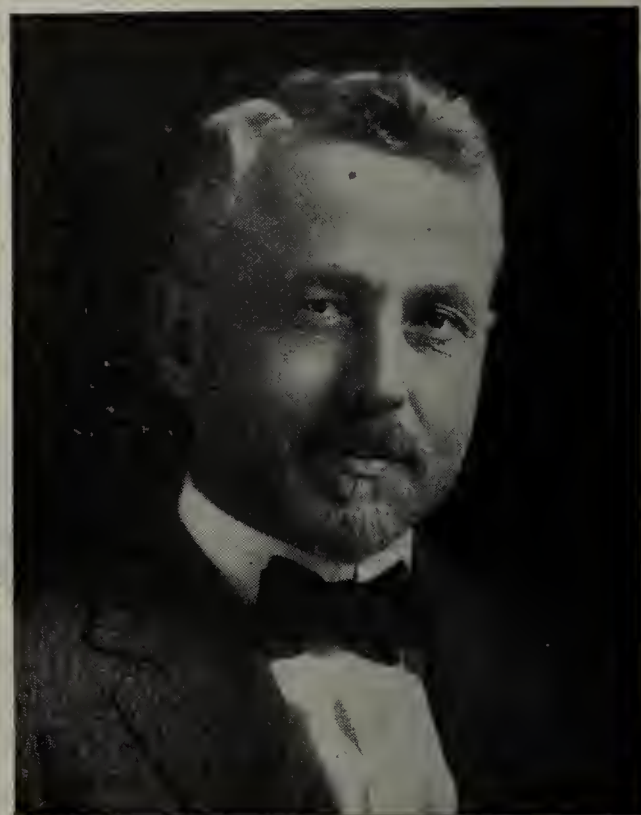
The Art Division, with F. H. Rhead, chairman, heard the reading and discussion of thirteen papers; the Enamels Division, of which E. P. Poste is chairman, 25 papers; Glass Division, W. M. Clark, chairman, 22 papers; Heavy Clay Products, presided over by Ross C. Purdy, 12 papers; Refractories Division, of which A. F. Greaves-Walker is chairman, 38 papers;



President Forest K. Pence, Columbus, Ohio.



President-Elect Frank H. Riddle,
Flint, Mich.



Secretary Ross C. Purdy, Columbus, Ohio

Cotta, and White Ware, while the general sessions were held in the convention hall.

In all there were 161 papers on the program, in addition to which there were 22 published papers, any one of which were to be discussed upon request of any member. Besides the papers and discussions, the routine business took considerable time and the social features, supper, smoker, and entertainment Monday night, banquet Tuesday night, and a film show Wednesday night, together with trips to various points of interest in and about St. Louis, made for a busy crowded three days of both profit and pleasure.

The convention was called to order Monday morning by President Forest K. Pence, who introduced Honorable Henry W. Kiehl, mayor of St. Louis, who made a pleasing address of welcome. He let it be known in an emphatic manner that he considers the clay industries are the basic and most important industries in the building world. He stated he was proud of the fact that St. Louis was a brick built city and he himself was formerly a brick contractor for many years.

Terra Cotta Division, A. F. Hottinger, chairman, 15 papers; White Ware Division, E. T. Montgomery, chairman, 19 papers.

Of particular interest to the brick manufacturers were the meetings of the Heavy Clay Products Division. Tuesday morning the delegates accepted the invitation extended by the Executive Committee of the Joint Research Committee, joined with the U. S. Bureau of Mines and the Hydraulic Press Brick Company, for the inspection of the research work being carried on at the Hydraulic plant on King's Highway at Frisco track, where the U. S. Bureau of Mines crew, with their specially equipped railroad laboratory car, was making heat balance determinations on a kiln.

The election of officers for the ensuing year resulted as follows: President, Frank H. Riddle; vice-president, E. W. Tillotson; treasurer, R. K. Hursh; secretary, Ross C. Purdy. The advisory board consists of the foregoing officers and Messrs. Howe, Salisbury, Minton and Pence.

The midsummer meeting of the society will probably be held in Canada.

ANNUAL MEETING OF IOWA CLAYWORKERS.

THE IOWA CLAY PRODUCTS ASSOCIATION held a very successful meeting at Des Moines, Wednesday and Thursday, February 15 and 16. The sessions were well attended and a good program was carried through in able fashion, with President Groves H. Galvin serving well in his capacity. He opened the first session with an interesting address, in which he emphasized the need for better knowledge in figuring costs, stating the present demoralized price situation was due to a large extent to the incorrect ideas as to the real cost of manufacture. He believes better business conditions are just ahead, based on the fact that a great amount of deferred building must eventually be done in addition to the usual work necessary to supply homes and habitations for the rapidly increasing population. He praised the work which is being done for the industry by the various national trade associations in the clay field.

B. F. Kaufman of Des Moines made a talk on general business conditions. John Thompson of The Homestead, Des Moines, had something to say about the farmers' financial conditions, stating it was not as bad as painted, and that a campaign of education along the line of more silos, drain tile, etc., would be worth while.

A talk on salesmanship was given by Ralph Tuller of the Reliance Brick Co., Des Moines, in which he urged the clay products manufacturers to give more attention to the education of the dealers in the use of clay products so more intelligent service could be rendered by them, resulting in a large sale of the materials.

C. Y. Smith, of Ottumwa, talked from the viewpoint of the dealers on present conditions and relations with the clay products manufacturers. He stated lumber dealers are awakening to the fact that clay products are important materials to have as a side line, and in his opinion the manufacturers should offer a fair commission for the handling of their products through the dealer.

H. R. Straight of Adel, spoke on the relationship of the dealer and the manufacturer, and blamed the latter for a great deal of the lack of co-operation.

Thursday morning, E. R. Sturtevant, secretary of the National Hollow Tile Manufacturers' Association, made a general talk on associational work, stressing the importance of advertising and research work, and a fight for proper freight rates.

Paul E. Cox of the Ceramic Department of the Iowa State College, Ames, followed with a valuable paper on "The Clays of Iowa," which showed that Iowa was favored with an abundance of raw materials suitable for the manufacture of a large number and variety of clay products.

"Fuel Economy" was the subject of a talk by D. A. Moulton, Des Moines, during which he urged the purchase of coal on the heat unit basis, and the careful study of kiln conditions in construction and operation.

R. W. Crum, of the Iowa State Highway Commission, spoke on the "Importance of Drain Tile in the Sub-Drainage of Roads," and also of the losses incurred by drain tile manufacturers in the breakage and delivery end of the business. A committee was appointed to confer with the highway officials to secure proper arrangements which would eliminate the trouble incident to drain tile deliveries on the ditch. The committee consists of C. B. Platt, Van Meter, H. R. Straight, Adel and J. D. Cook, Mason City.

J. A. Jung, commissioner of the National Clay Products Industries Association, Chicago, gave a short talk on the work of his organization. A talk on "Cost Accounting," report of the resolutions committee, and the discussion of minor matters was followed by the election of officers, which resulted as follows: President, H. L. Tramp, of the Creston

Brick & Tile Co., Creston; vice-president, J. O. Reaver, Iowa Brick & Tile Co., Des Moines; treasurer, H. R. Straight, Adel Clay Products Co., Adel; secretary, C. B. Platt, Van Meter.

USING AMERICAN CLAY.

The Sebring Pottery Company, Sebring, Ohio, is now using clay from a new clay mine in Butler county, Missouri, for its earthenware products. Heretofore 45 per cent of the clay used in the manufacture has been imported from England. A deposit of such clay has recently been found in Butler county, Missouri, and the mine is now in operation. The Sebring pottery is using this clay, which is said to be far superior to the clay formerly used.

CHANGE OF OWNERSHIP.

S. Geijsbeek, the well-known Ceramic Engineer, formerly of Portland, Oregon, at present living in Seattle, Wash., has disposed of his interest in the Fairmount Brick & Tile Co., of Monroe, Oregon, to the Central Clay Products Co., of Monmouth, Oregon. The new owners state that the Fairmount Brick & Tile Co., will be operated as an independent company under its own name with headquarters at Monroe, Oregon.

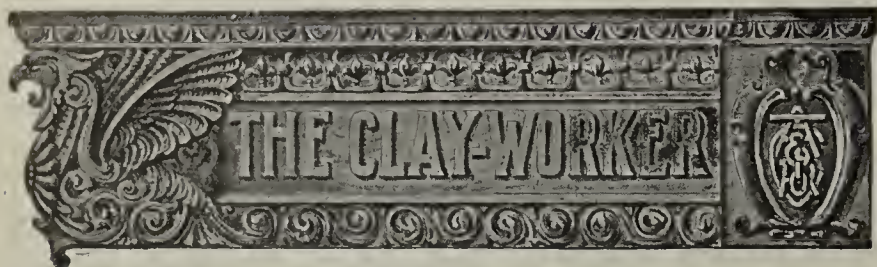
CERAMIC INVESTIGATIONS OF THE BUREAU OF MINES.

Experiments on aventurine glazes to determine the effect of varying iron oxide and silica have been completed at the Ceramic Experiment Station of the United States Bureau of Mines at Columbus, Ohio, and a report submitted for publication.

Luster decorations may be applied to pottery by two methods, first, by applying in paste condition suitable metallic salts to the surface of the ware and firing at a dull red heat; second, by vaporizing such salts in the flame of the kiln in which the ware is placed. The latter method is productive of iridescent effects similar to that of favrile glass. An investigation of lusters for pottery decoration has been made by the Bureau of Mines to determine the most suitable glaze compositions for making vapor lusters. Results indicated that glazes containing B_2O_3 and PbO produced the best luster effects, the intensity of the luster increasing with larger amounts of these two components in the glaze.

Early in 1918 the Columbus station began an investigation of American bond clays and graphites to determine their crucible-making properties in comparison with foreign clays and graphites. Work on the bond clays, which was completed in the fiscal year 1920, showed that better crucibles could be made from domestic clay than from imported clays. The testing of graphites on which some preliminary work had been done was then undertaken by the Bureau of Mines. Samples of seven graphites, from Ceylon, Madagascar, Canada, New York, Alaska, Texas, and Montana, of 400 pounds each were obtained. Ten crucibles of No. 70 size were made from each graphite for brass-melting purposes, and six crucibles of No. 60 size for testing under steel-melting practice. These crucibles were made in the plant of the Vesuvius Crucible Co., Swissvale, Pa. The brass-melting crucibles were shipped to the plant of the Detroit Lubricator Co., Detroit, Mich., where they were tested under regular brass-melting practice.

Experiments on 14 brands of fire clay to determine their durability and load-carrying capacity in furnace arches are being continued by the Bureau of Mines. Fusion and permeability tests and chemical analyses are still to be made. Entire bung arches, of 40 brick each, were tested at the works of the Ohio Malleable Iron Co., at Columbus, Ohio, in a 40-foot furnace. The relation between serviceability and the resistance to load at high temperatures, spalling, density, porosity, chemical analyses, fusion temperature, and permeability were studied. The results showed a close relation between the percentage loss on spalling and the serviceability.



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OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77.

February 28, 1922.

No. 3

CURRENT COMMENT.

Kiln fires are being lighted.

* * *

Develop those spring prospects.

* * *

Spring building prospects are budding out.

* * *

Looking forward is good, but forward acting is better always.

* * *

Old Scum Trouble is now in for a slap in the face with a color spraying machine.

* * *

The porcelain coffee pot has received the O. K. of science as better for the health than the metal pot.

* * *

Income taxes will be just as troublesome to figure this time even if they don't yield as much as last year.

* * *

More permanent building on the farm is a good working slogan for this year, and the Mann trowel ought to help some.

* * *

It's a safe bet that no man who attended the N. B. M. A. convention regretted it. The regrets are for those who missed it.

* * *

There is some bad medicine in the radical preachings of labor agitators that should have some serious thought, and some back fire attention.

* * *

There is a lot of confusion when we try to interpret our tariff laws into the terms of money exchange rates with other countries, and it will not be easy to develop an intelli-

gent tariff until we straighten out the tangle of international finances.

* * *

There is business to be had, but you have to go get it if you want your full share.

* * *

One way to get rid of fear for tomorrow is to do your best today to make things move.

* * *

We know a lot of fellows who would be glad to have the job of Haysing the movies at \$150,000 for ten years.

* * *

Every committee in every division of the American Ceramic Society is doing things that count for progress.

* * *

Making life miserable for those around you is not a good way to make happiness for yourself. Try being more pleasant.

* * *

In union there is strength, or menace, and which it may be depends upon the virtue of the tie that binds people together.

* * *

As long as baseball pays more for judgment than the Federal bench there are a lot of us who will prefer the ball game to being in the court room this summer.

* * *

Money may furnish the fuel that makes the steam but it is knowledge that makes the wheels of progress move, and it is the research boys who are digging this up and dishing it out.

* * *

Mortar is not a clay item, but when mortar colors fade it may spoil the looks of a good brick job, so there is a brick interest in the matter of good mortar colors as well as permanent mortar joints.

* * *

How to reduce manufacturing cost without cutting wages is a problem, which like the poor, is always with us. But every time we seek intelligently for an answer to it we make some good industrial progress.

BRICK LAYING COST.

If the cost of brick laying can be practically cut in half by developing a wide use of the new trowel which was a feature of the N. B. M. A. convention it will be a big thing in the boosting of brick building. One drawback to the progress of brick for years has been the cost of laying brick in the wall and at times the difficulty in securing enough skilled labor to do the work. The trend of talk at the national gathering pointed to this plainly enough. Therefore if we can double the laying capacity of the brick mason with improved tools we will have made a distinct step forward that will mean a big thing to the brick manufacturing industry as well as a Godsend to those who want to build brick homes and have been handicapped by the high cost.

LOCAL TRADE.

Local trade is the big thing on the prospective horizon at the present time. It is the big thing in the brick industry because high freight rates pile up the cost in shipping long distances. In the hollow tile division it is easily evident that the one salvation to the market situation at the present time is for more of the manufacturers to turn their attention to developing local trade instead of competing so sharply with others for what trade is to be had in the large cities and building centers. The big field of opportunities all around is in the local surroundings. The chances to develop new

building in the smaller cities and towns and on the farms in which brick and hollow building tile is used instead of wood. Those who will follow this idea actively and intelligently throughout the present year will not only help to relieve competent conditions and the burden of long distance freights but they will be paving the way to better business for themselves in the future as well as making for new business for the present season.

SICK WITH FEAR.

In the course of an appeal being made by Miss Ann Morgan and her secretary and manager for the American committee for devastated France before a gathering of business men the point was made that France is sick with fear. Then there was brought out along with it the thought that this fear that things won't go right is the main ailment of business and industry throughout the world today and even here in the United States. One of the things that ails business and industry is fear sickness. We cheer each other up, talk about good times coming around the corner, but back of it all there is an undercurrent of fear in each mind that it is not yet time to venture forward with this enterprise or that, and the result is a holding back that impedes the wheels of industry. If we all develop a little more confidence and shake off this fear of the safety and success of business enterprise at the present time we will get under headway in short order. And now a realization that this is what is the matter with us should help us a lot in shaking it off.

TRADE FACTORS.

There are always three trade factors which must be considered. One is the amount of stock on hand already manufactured ahead of needs, one is prices being obtained for various offerings in brick and hollow building tile, and the third is the present prospective volume of trade demand. The more light we can have on the amount of stock available and the prospective demand the easier it is to figure out what may happen to prices and what may be doing in the way of cut throat competition. As a matter of fact prices should always be determined by cost factors. And when we can keep a normal balance between supply and demand these factors do govern. When we do not, when the supply exceeds the demand, the cost factor weakens and sometimes profits disappear in the scramble for trade. It naturally follows that the trade should seek therefore to keep itself enlightened as to the quantity of stock on hand, and when this threatens to become burdensome time and energy were better spent at helping develop a greater demand than in competing with one another with price cutters for what trade is available. The present is a mighty good time for all those in a given locality who enter into competition with each other to walk closer together and manifest a co-operative spirit for the good of all.

THE TRADE HOOK UP.

In advertising and in marketing clay products there are two important factors that should be kept zealously in mind. One of these is the importance of co-operation and support of local retail dealers in each community. The other is trade paper advertising as well as general advertising, because the industry must have a proper trade hook up and proper co-operation with dealer representation at the consuming end to keep building up a bigger and better business. An illustrative example of what is meant here is furnished by comments on the failure of the Ingersoll Watch concern. Some of the causes contributing were said to be lack of in-

terest in the retailer and lack of recognition of jobber. The contention that too much of the advertising and sales effort was directed toward the buying public and not enough attention was given to developing good will among the dealers.

Every product that has attained continuous wide distribution has done so through the establishing of well defined channels of trade which hooks up with retail dealers in each community at the consuming end. And to reach these dealers the advertising departments recognize the importance of trade paper advertising as coming first and taking preference over widespread advertising to educate the public. The trade hook up especially with the local retailer is one of the most important factors in the future development of brick and hollow building tile in general building operations.

IMMIGRANTS.

The immigrant problem is agitating this country considerably now not only because it is found advisable to limit the number admitted but also because the time has come for us to safeguard ourselves against undesirables. Too much free admission of undesirables and too much freedom in their propaganda may spell ruin in this country unless we watch out. We are at a sort of critical period right now in re-adjusting our industries where radical doctrines may do a lot of harm and the example of Russia and some other of the older countries should stand as an impressive warning. And there is no such thing as all good immigrants or all bad immigrants. No new immigrant can be a good citizen of this country until he understands the country, and there is no real means for distinguishing clearly between those who will make good citizens and those who will not. There is a measure of good and bad in all of us and we go through most of our life before we demonstrate clearly how much we are worth to the country or to the world. The situation today is such that we should be slow to find fault with restrictions against immigrants for it were better to err on the side of being too stringent than to admit too many undesirables at the present time.

HOOVER-DAUGHERTY.

The correspondence between Secretary of Commerce Herbert Hoover and Attorney-General Harry M. Daugherty on trade association activities demonstrates two things pretty clearly. One of them is that Secretary Hoover is earnestly seeking to develop industry and commerce through trade associations. The other is that while Attorney-General Daugherty will acquiesce in this so far as proper activities are concerned he will keep an eagle eye on commercial associations to see that they do not engage in activities which contravene the present anti-trust laws.

One of the things standing out conspicuously in Secretary Hoover's letter is in this sentence:

"Commercial progress in industry has always been measured by the advance in knowledge of those engaged in industry."

He goes on then to point out that all this knowledge cannot be acquired at one time or by one person and impresses how continued meeting in conventions and through the activities of association people continue educating themselves, that is, gaining more knowledge of their business and through this means make continued progress.

There is no doubt that whether an association's activities are devoted to research and instructive work in manufacturing methods, or whether it is devoted to the commercial end, there enters always an educational feature. And as Mr. Hoover says, progress can always be measured by the ad-

vance in knowledge gained by those engaged in business. Good trade association work does more than anything else to keep up research activities and to develop that knowledge which makes for progress.

There is no question on this point. The only questions are those of what activities commercial associations may engage in and not bring trouble on themselves. These questions will all be threshed out in time. Meanwhile, there is no doubt that business and industry on the whole will heartily approve the efforts of Secretary Hoover to help promote business through trade association activities. There is no question either that his idea will find much wider favor in the public business mind than those of Attorney General Daugherty.

YOU NEED GOOD MOULDS TO MAKE GOOD BRICK.

Under the above caption, the Lancaster Iron Works makes some timely remarks relative to their brick moulds in a leaflet which pictures the moulds very clearly. They make a specialty of brick moulds of all sizes, kinds and grades. If you are in the market for moulds, whether the ordinary mould or a mould for any particular purpose, write for a copy of the leaflet which tells how to order moulds. Address the Lancaster Iron Works, Lancaster, Pa.

A ONE-MAN BRICK PLANT.

HERE IS AN interesting story in the current issue of the American Clay Magazine from Fred Gleckler, of Oak Harbor, Ohio, about operating the old-time community brickyard that is a good thing to meditate over in this day of the great call to get back to brass tacks and first principles.

He says he has one of those well equipped small horsepower brickyards which were familiar 40 years ago, with the equipment and ideas brought more up-to-date. During the war when help was not to be had, he operated the plant alone one summer and set and burned 150,000 brick at an average rate of 2,000 brick a day. He maintains, too, that there are just as good opportunities for the small community brickyard today as there were 40 years ago. And, reading the story of his doings at this plant leaves one with the impression that if such community brick yards are in the hands of people as competent and determined as Mr. Gleckler has shown himself in this case it certainly should make good even in competition with the larger and more modern equipment plants.

CONSTRUCTION COSTS.

CONSTRUCTION COSTS can be separated into the two broad divisions of material cost and labor cost. And on the whole both these show today as higher than pre-war in the ratio of about 165 to 100. Also, generally speaking, we can figure that the two items fairly balance, both in their totals and in the ratio to pre-war, but of course cheaper labor would automatically bring cheaper material costs, because the labor item is a factor in the material cost itself.

The time has come now for the clayworking industry, and especially that branch of it devoted to selling, to inform itself more specifically in the matter of costs. This will not only help in selling, but it is being expected of those who promote home building—that they can and will furnish the prospective builder with figures showing the cost of the completed home.

The retail lumber dealers have made a feature of this kind of service to the public along with plan books and building suggestions for years now, which is one reason why so many

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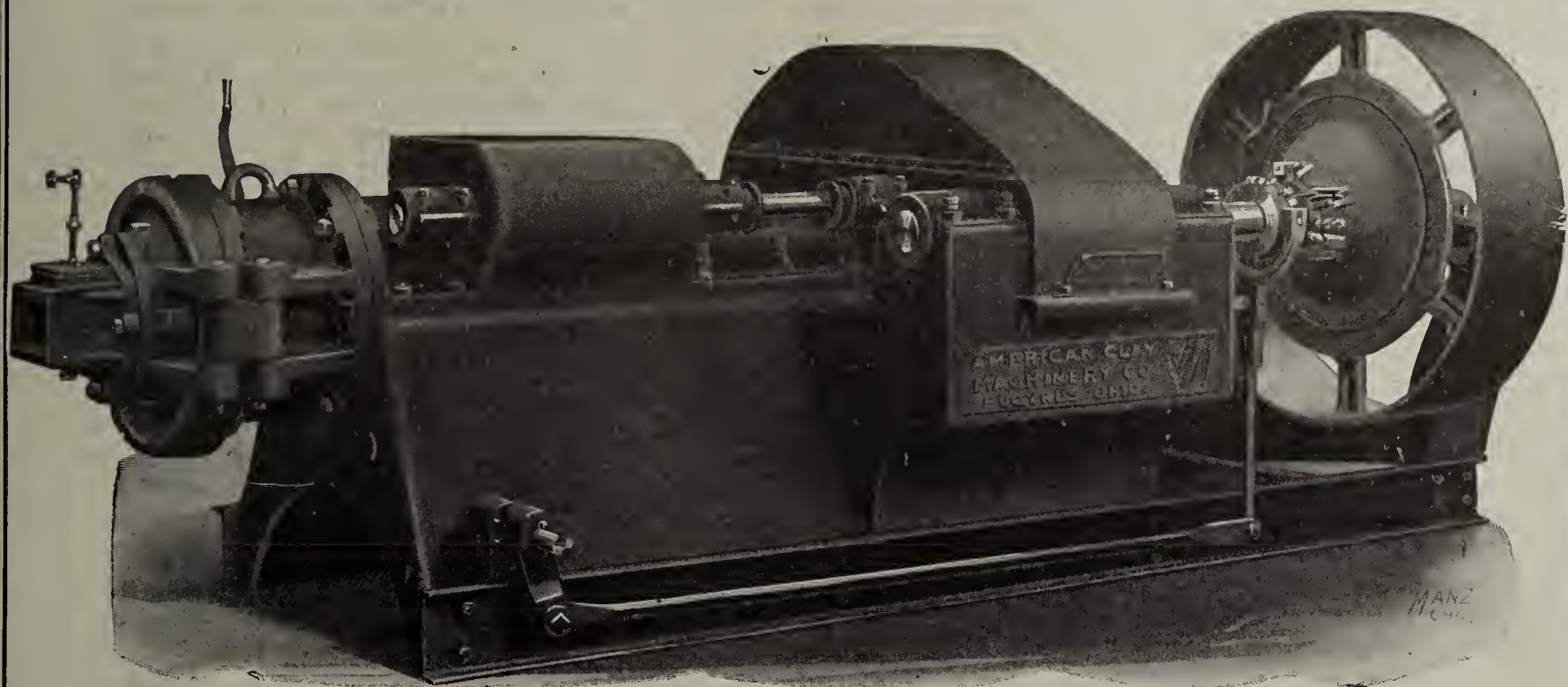
homes have been built of lumber the past year. It is also one good reason for the clayworkers to hook up with the retail dealer for local distribution and promotion work, too. But, entirely aside from this, the time is here for those who are selling the brick home idea to post up on cost details—and totals—so they may be able to sell the brick home, not merely a pile of brick. And to aid in this some interesting surveys are being made to get at averages. These will help, but meantime try helping yourself by getting your contractors together and getting at the detailed figures of building costs.

CHAMBERS No. 10 MULTIPLE BRICK AND TILE CUTTER.

A beautiful leaflet is being mailed by the Chambers Brothers Company, Fifty-second Street, corner Media, Philadelphia, Pa., describing some of their recent offerings to the trade, including their No. 10 Multiple brick and block cutter, a cutter that does not swell the clay bar, and their No. 2 Keystone Auger machine for brick and tile; the latter is equipped with a new die holder of particular value to the manufacturers of brick and tile, radial chimney block and similar ware. The leaflet also has a fine illustration of the Chambers Keystone Repress, built in four sizes, and used largely by fire brick manufacturers. A copy of the leaflet may be had for the asking.

AMERICAN

No. 290 AUGER MACHINE



"By Their Deeds Ye Shall Know Them".

Ask These Users

WHAT THEY THINK ABOUT THE AMERICAN No. 290 AUGER MACHINE.

Here are a few users. Ask for other names.

All leading and successful Clay Plants have the No. 290 to help them succeed:

California Brick Company	Niles, Calif.
and	
Los Angeles Pressed Brick Co	Los Angeles, Cal.
and	
Pennsylvania Fireproofing Co.	St. Marys, Pa.
and	
Evans & Howard Fire Brick Co.	St. Louis, Mo.
and	
Frances Vitric Brick Company	Muskogee, Okla.
and	
Bradford Brick & Tile Company	Bradford, Pa.
and	

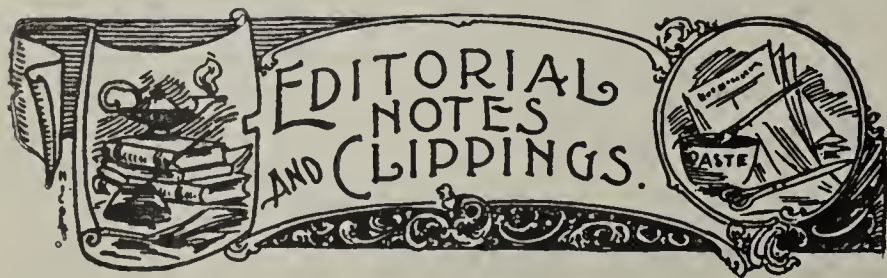
There are many others. Names on request.

THE HADFIELD-PENFIELD STEEL COMPANY

formerly

The American Clay Machinery Co.,

Bucyrus, Ohio.



Tuscaloosa, Ala., is to have a new brickmaking plant, with a capacity of 40,000 brick per day.

The Baumgartner Brothers Co., of Chatfield, Ohio, has decided to change the name of the company to The Chatfield Brick & Tile Co.

Joseph Shankey, of Haverstraw, N. Y., recently purchased the Snedeker Brick property at that place and will operate the plant the coming season.

The Arey Brick & Lumber Co., of Salisbury, N. C., has been incorporated by F. M. Tyack and N. G. and J. A. Arey. They company is capitalized at \$100,000.

The Kenton Brick & Tile Company has installed new machinery at its plant at Kenton, Ohio. John Jordan is president and Edward Schindewolf is vice-president of the concern.

J. Madison Waring, president of the Western Brick Company, Danville, Ill., died recently at his home in Muncie, Ind., following an attack of heart trouble. Mr. Waring was eighty years old and a veteran of the Civil War.

The Eastern Brick Corporation has been incorporated at Wilmington, Del., with \$1,000,000 capital stock, to manufacture brick, tile, etc. The incorporators are Arthur W. Britton, Samuel B. Howard, Raymond J. Gorman, New York City.

The Massillon (Ohio) Brick and Tile Company was dissolved by the stockholders recently. The company had owned and operated a brick and tile plant at Warmington, several miles south of Massillon. The plant was sold about 18 months ago to the Continental Clay Company, of Canton. W. G. Clementz was president of the company.

The Syracuse Pottery Co., Syracuse, N. Y., has purchased a new site comprising 100 acres of land on which they will erect a new pottery. Ground will be broken for same early in the spring. The business of the company has outgrown the present plant which has been in operation almost half a century. The output of the pottery is entirely of flower pots.

Captain John Porter, supposed to be the oldest paving brick manufacturer in the United States, died at his home in Newell, W. Va., recently at the advanced age of eighty-three. He first manufactured brick in 1830 at New Cumberland, W. Va., where he operated a plant under the name of the Globe Brick Company, and later on established a plant at Kenilworth, W. Va.

A corporation known as the Anthracite Brick & Tile Company with Ellis W. Leavenworth, of New York City, secretary-treasurer, and Wm. R. Royer, of Wilkesbarre, Pa., vice-president, has taken over the Keystone Clay Company, of Wyoming. The Wyoming plant is to be extensively remodeled and improved to accomplish the most improved methods for the manufacture of brick and tile.

The Continental Clay Co., with offices at Columbus and Canton, Ohio, held its annual stockholders' meeting in Canton recently, and the following directors were elected: Judge P. A. Berry, Warren B. Ferris and C. E. Berridge, Columbus; J. A. Calhoun, Canton; ex-Governor O. A. Eberhart, H. V. Brooks, Frank H. T. Potter, Chicago. Warren B. Ferris was elected president; C. E. Berridge, secretary and treasurer; J. A. Calhoun, elected president of the board of directors.

The reports of the different officers shows the company in good condition.

The Groesbeck Standard Brick Co., of Groesbeck, Texas, has been incorporated by I. and Joe Jolesch and E. Raphael, with \$40,000 capital stock.

The Dawson Brick Co., of Dawson Springs, Ky., has been organized by Leo Dixon, Charles F. Cato and I. N. Day. The company is capitalized at \$20,000.

Frank J. Shinnick, for many ears identified with the brick-making interests of Kansas City, Mo., died at his home in that city recently. His wife, one son and daughter survive.

The B. Mifflin Hood Brick Company, with general headquarters at Atlanta, Ga., recently started a new plant at Perla, Arkansas, for the manufacture of fire brick, with a daily output of 50,000 brick per day.

The Muskogee Vitrified Brick Co., will build an addition to their plant and install new clayworking machinery, which will bring the present output up to 100,000 brick per day. Frank A. Nicholson is president and manager of the company.

The Patuxent Clay Products Company will build a \$100,000 plant at Patuxent, Md., for the manufacture of hollow building tile. The plant will have a daily output of about 125 tons of tile. The company owns 475 acres of excellent clay land. It is planned to have the plant ready for operation about the middle of May.

According to statement of Dr. H. S. MacAyeal, director of Public Welfare of Ohio, the State Brick Plant at Junction City, O., will be enlarged and the most modern equipment will be installed, work on same to begin at an early date. Director MacAyeal states the demand for brick for work on the various state institutions and highways will be greater this year than ever before.

F. C. Haddon, secretary and manager of the Salina Brick & Tile Company, Salina, Kansas, died at his home in that city recently after a short illness with pneumonia. Mr. Haddon took over the plant when it was badly run down a number of years ago and had built it up, making a modern plant with up-to-date equipment. E. J. Pafford has been appointed secretary and general manager of the company.

The Michigan Porcelain Tile Company has been incorporated with \$100,000 capital stock at Ionia, Mich., and plans are under way for a large factory building. The product to be manufactured will be glazed tile, both white and colored. The officers of the company are: President, R. A. Hawley; vice-president, Thane Benedict, and secretary-treasurer, Harvey E. Kidder. The directors are R. A. Hawley, Thane Benedict, T. B. Preston, Henry Witzel, and Gerritt Wykstra. The building to be erected on the new site will be probably 200 feet by 100 feet. There will be one power tile press and

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher,

412 No. Walnut Street,
Bloomington, Ind.

two kiln to start with and additional machinery will be added as the business expands, it is stated.

The Kentucky Refractories Corporation, Russell, Ky., plans shortly to erect a plant at Russell. The first unit is to have a daily capacity of 75,000 standard brick. The corporation has 3,000 acres of clay lands adjacent to the plant location. The owners of the corporation are: C. K. Turley, president; R. T. Hipp, vice-president and general manager, 1016 East Main street, Massillon, Ohio, and A. J. Ivey, secretary and treasurer.

Pomona (N. C.) Brick Company started work the first of the month on a new kiln and is making plans for one of the busiest seasons in the history of the yard. E. G. Stahlman, proprietor, says that he has several large orders ahead and has been figuring on several large buildings in nearby cities as well as on a number of important Pomona buildings. Last year was a record year for the brick company but there is every indication that 1922 will be far ahead of 1921.

Petition has been filed in district court at Pawnee City, asking for the appointment of a receiver for the Table Rock Brick & Material Company. Those asking for the receiver are Joseph W. Tomek, Willis C. Fellers, J. N. Phillips and Judge Gagnon. The latter is the administrator of the estate of O. N. Turgeon, who was president of the Community State Bank. The defendants named in the petition are: F. E. Schaaf, F. A. Stech, Fred Pelinek and J. E. Jewell.

Kenneth Seaver, who has been identified with the Harbison-Walker Refractories Co., Pittsburgh, for the past nineteen years, latterly in the capacity of assistant general manager of sales, has been promoted to the position of general manager of sales, succeeding Judd J. Brooks, Jr., who has been

appointed to the position of assistant to the president. Mr. Seaver graduated with the degree of civil engineer from the Massachusetts Institute of Technology and before joining the Harbison-Walker Company, was with the Pennsylvania and Baltimore & Ohio railroads and also for a short time with the American Bridge Co.

Lee Humphrey, president and owner of the Humphrey Brick & Tile Manufacturing Company, of Brookville, Pa., was a visitor to the Boston and Paterson brick markets in the early part of February. He was accompanied by his youngest daughter, who was sight-seeing while her father attended to business. He found business in a healthy condition in all the markets visited with a heavy demand for tile, quoting prices on some of the large projects now under way. Mr. Humphrey manufactures one of the best grades of tile in the East. Mr. Humphreys makes frequent visits to the Eastern markets as his product is always in demand in that territory.

Announcement of plans for the erection of a \$20,000 pottery and stoneware finishing plant at Chester, Wash., about five miles southeast of Spokane, was made recently by Charles Stormes, manager of the Standard Stoneware Company. The company is now operating a small plant at Chester. The first kiln is to be completed April 1. The new plant will enable them to turn out 4,000 gallons a day, for it is to be equipped with a complete outfit of modern machinery," according to Mr. Stormes. The factory will occupy a building about 80 by 110 feet and will employ about 30 men. The plant is to be operated on the Ford plan. Every employe will be a stockholder in the company. At the present time they are turning out flower pots, jardinières and stoneware. They have been operating since last July, with a two-kiln capacity.

Andrew Carnegie Never Hesitated!

ANDREW CARNEGIE never hesitated to scrap a plant or process when he found a more profitable method.

There was no inclination to cling to old equipment if he had a proven means of increasing profits—"increased tonnage or better quality" were his watch words.

Today, more than ever before, economical and more profitable production is essential in every industry.

The Bethlehem Steel Company Installed 7 HUM-MERS

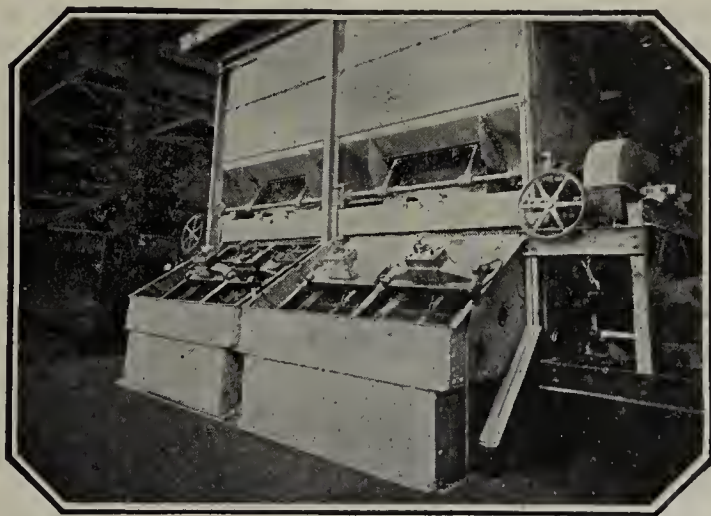
The HUM-MER process of screening has saved the Bethlehem Steel Co. thousands of dollars preparing coal for their coke ovens.

Let us show you how you can save money and earn greater profits with the HUM-MER.

Request Catalogue 42-W

THE W. S. TYLER COMPANY
Cleveland, Ohio

Manufacturers of Woven Wire Screen
and Screening Equipment



Screening Ore with HUM-MER Electric Screens

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND CLAY NEWS.

BUSINESS prospects for clay products manufacturers of Wisconsin the coming season are developing more favorably with the announcements of plans and construction work in Milwaukee and other cities of the state. With building permits in January totalling \$3,191,312, a new record for that period has been set in Milwaukee. The number of permits, 1,654, also is the largest ever issued in January in Milwaukee. These figures substantiate predictions made previously that this year would see a record-breaking boom in building.

"January was far ahead of any first month of the year in department annals," said William D. Harper, building inspector of Milwaukee. "Last year, which broke all building records, January showed only 1,023 permits for \$914,904. Seven years ago January approached the present record, due to issuing one large permit, for the Plankinton Arcade."

Indications are that next season at least 1,000 homes will be erected in Milwaukee. Building costs are said to average about 25 per cent below two years ago, except labor, according to some local firms. It is declared that money is plentiful at a fair rate of interest for building purposes.

As the result of several hearings held by the Wisconsin Railroad Commissioner at Madison, the petition of the Wisconsin Clay Manufacturers' Association vs. the Ahnapee & Western Railroad Company et al., that rates on brick between Wisconsin points are excessive and unjust, has been taken under consideration. It is expected that the commission will decide on a reduction in the present rates applying to brick and concrete blocks. At the first hearing the clay manufacturers presented for the consideration of the commission proposed rates on brick, in carloads, when the movement is over a single line, and the average earnings per car under such rates. For a distance of 10 miles at a rate of \$3.05 earnings of \$21.20 were shown in the complainant's exhibit. For 50 miles, at \$4.85 earnings of \$33.71 were shown; 100 miles at \$6.90 show earnings of \$47.96; 200 miles at \$8.45 show \$58.73; 400 miles at \$14.50 show \$100.78.

The hearing was resumed January 25, when no additional testimony was adduced on behalf of shippers, but the railroads put in their testimony. Representatives of the Northwestern, Milwaukee and Omaha roads introduced numerous exhibits in an endeavor to prove that the present level of rates on brick and concrete products in Wisconsin is not unduly high, but exhibits of railroad witnesses were shown to be of comparatively small value, because they were not compiled from actual movements. The commission denied the

motion that the hearing also covered concrete drain tile and sewer pipe.

The Burnham Bros. Brick Company, Milwaukee, which is contesting in court the designation of the district occupied by its brick yards in Bay View for residential purposes, has offered the city the 12 acres of land at the eastern end of its property at less than the assessed valuation, and offers to drop the litigation providing the city will buy the land. The public land commission favors the purchase without restrictions upon future use of this land by the city. The Burnham firm urged the purchase for park purposes, but the commission feels that the city may want to resell the property after the hole made by excavation for clay has been refilled.

The Sundby Pottery Company has been incorporated at Milwaukee with \$500,000 capital stock by W. Mollerus, E. Jehrz and W. Schinz, Jr. A product for storage batteries will be manufactured, among other items, it is announced.

At Kenosha the Wisconsin Clay Products Company has been incorporated with \$100,000 capital stock. Gottlieb Schaefer, Michael Lauerson, city of Kenosha, and Joseph Orth, R. F. D. No. 3, Box 43, Kenosha, are the incorporators.

August Bohne and Aug. C. Kuehl, who some time ago acquired the property of the Kewaunee Clay Products Co., Kewaunee, Wis., after the business was declared unsuccessful under the management operating it at that time, are considering the advisability of resuming operations in the spring. The Gunther brothers, prominent Port Washington clay products producers, recently visited Kewaunee in an advisory capacity to the new owners. It is understood that the yard will be reopened if present plans materialize.

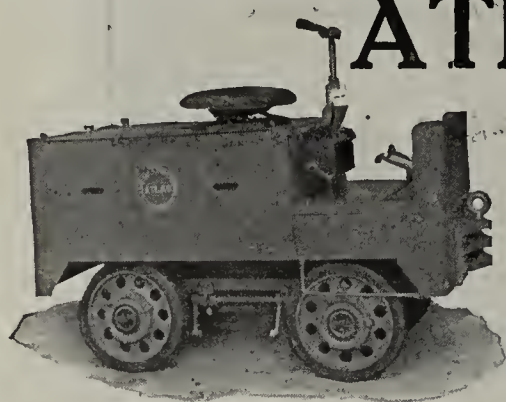
A BADGER.

ELECTRIC PROGRESS.

A review of the engineering accomplishments of the Westinghouse Electric & Manufacturing Company last year, prepared by H. W. Cope, serves to remind us among other things, that clayworking industry does not seem to be moving as rapidly as some others in taking up with and making use of electricity. Motor driving, for example, has made much more progress in the wood-working industry than it has in clayworking and the clayworking industry may profit from a more aggressive study of the possibilities here.

There is also indication in the review that good progress is being made in electric locomotion both for public railways and for private hauls.

The big feature of the year was in the installing at the Trafford High Voltage Laboratory a million-volt transformer and it is said that with the completion of that laboratory one and a half million volts will be available for experimental purposes.

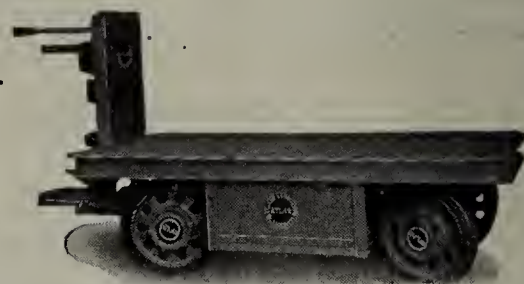


Storage Battery Trac

ATLAS COST REDUCING EQUIPMENT

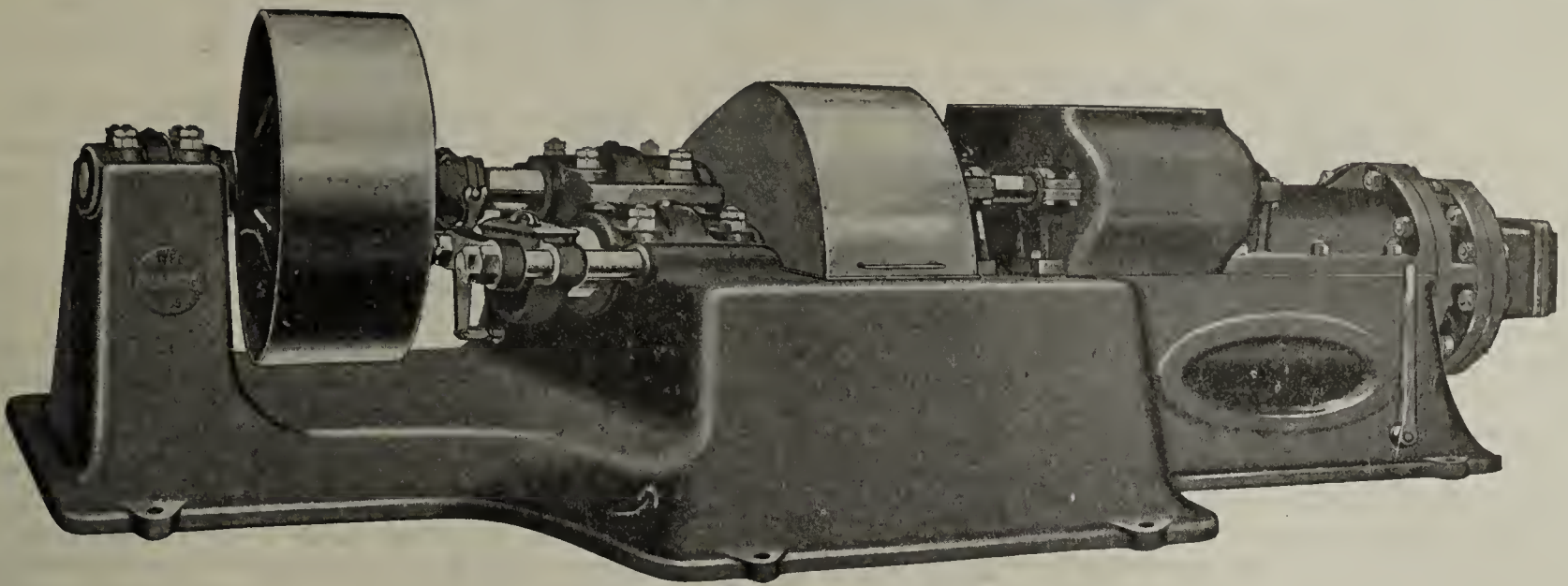
Electric Transfer Cars
Rocker Dump and Gable Bottom Cars
Storage Battery Locomotives
Electric Trucks and Tractors
Tunnel Kiln Cars

Let us solve your haulage problems.



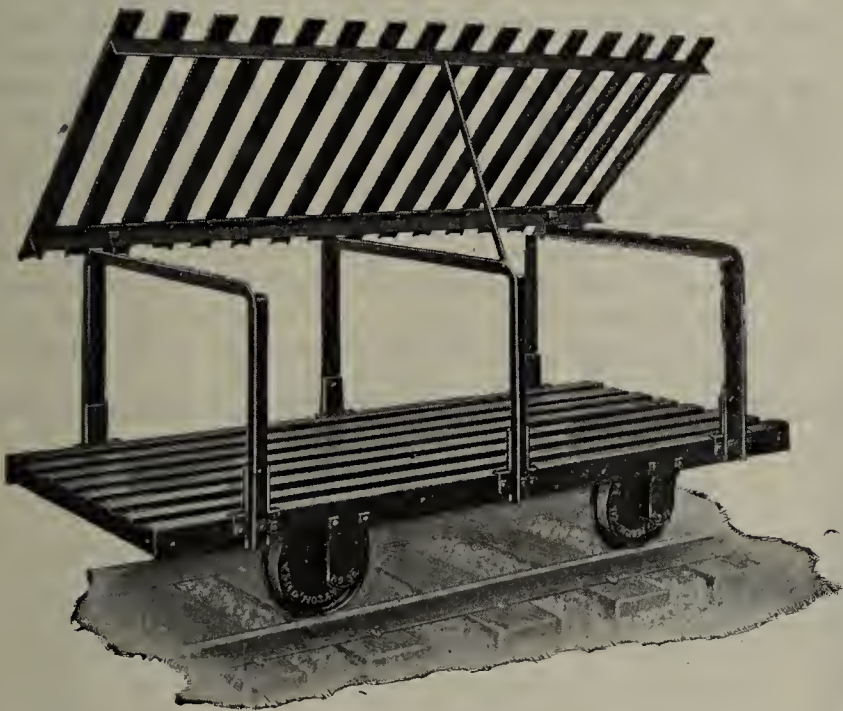
Storage Battery Platform Truck

The Atlas Car and Manufacturing Company
Engineers Cleveland, Ohio Manufacturers



Type 445—25M to 40M Brick per day
 Type 435—40M to 75M Brick per day
 Type 425—75M Brick per day Upward
 Or the Equivalent in Hollow-ware.

**THREE MACHINES OF ADVANCED DESIGN
 TWO MAIN CASTINGS, SHAFTS AND GEARS**



Type G

**Dryer Cars
 and
 Industrial Cars
 of all types**

**A Complete Line of
 Machinery and Equipment
 for the Clay Plant.**

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

Mention THE CLAY-WORKER.

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.

ACCORDING to F. M. Ransbottom, of the American Clay Products Co., of Zanesville, the pottery business and clay product industry is practically back to normalcy and everything indicates a good business for 1922. Mr. Ransbottom bases his predictions for this year on the report of his salesmen, who say that stocks are low and that dealers are beginning to replenish. The orders will not be given as lavishly as during the war period, as dealers are exercising greater caution, but there is a healthy and growing demand for staple goods including utility articles.

The last three months of 1921 were practically dull. Dealers had overstocked during the war and sales were slow. The volume of orders now is for kitchen crockery, rather than fancy ware.

The Belden Brick Company, one of the best known manufacturers of face and building brick in the Canton district, is moving into its new building at High and Tuscarawas streets, Canton. P. B. Belden is secretary and general manager of the company. Within a week the company offices will have been established in the new Belden building, which is two stories and modern in every respect. The entire upper floor will be used by the Belden company's offices.

The Kenton Brick & Tile Company has installed new machinery at its plant at Kenton, and will start operations about March 1. The newly elected officers of the company are: President, John Jordan; vice-president, Edward Schindewolf.

Satisfactory results in 1921 in view of the especially adverse conditions, was reported by the Bessemer Limestone & Cement Company, Youngstown, at its annual stockholders' meeting last week. The early part of the year the company's large cement plant was not yet in operation and other departments of its business were stagnant. Good earnings for the later months, however, were reported.

A depreciation depletion and inventory write-off of more than \$300,000 was made against the year's income. A surplus of \$680,000 establishing a book value for the common stock outstanding of \$145.33 a share was reported.

Optimism prevails in the brick industry in the Canton district and prospects for spring are brighter than for many years, according to P. B. Belden, secretary and general man-

ager of the Belden Brick Company, Canton, which operates five plants in the district.

"The future of the brick industry depends largely on the outcome of the meeting February 15, at Columbus, when brick manufacturers will confer on the reduction of freight rates on their products," Belden said. Manufacturers from this district will be well represented.

Building prospects in the Canton district are very bright for spring and this is an indication that the brick industry will see quite a revival within the next two months. At the present time brick plants in Canton and vicinity are operating at about 60 per cent of capacity.

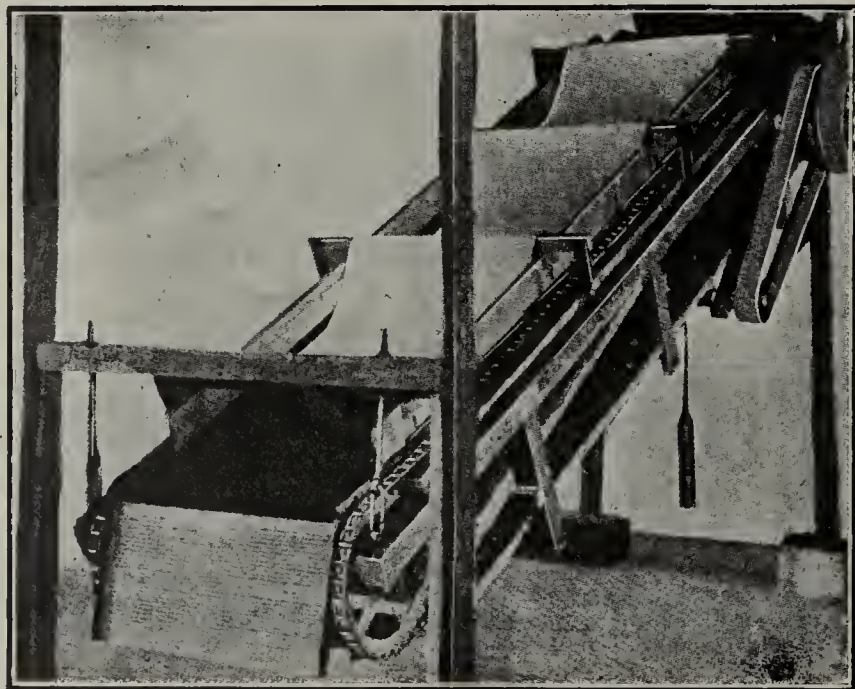
Capt. John Porter, 83, pioneer paving brick manufacturer and former riverman, died at his home in Kenilworth, W. Va., February 7, following a two weeks' illness. Mr. Porter, who was president of the Kenilworth Brick Company, manufactured the first paving brick manufactured in the United States. Prior to establishing a brick plant at New Cumberland, W. Va., he operated a packet line on the Ohio River. He served two terms in the West Virginia Legislature and one term as sheriff of Hancock County, West Virginia. He leaves his widow, one daughter and four sons, one of whom is State Senator J. N. Porter, of Kenilworth.

The Massillon Brick & Tile Company was dissolved by the stockholders at a meeting February 6. The company had owned and operated a brick plant at Warmington, several miles south of this city. The plant was sold about 18 months ago to the Continental Clay Company, of Canton. W. G. Clements was president of the local company.

According to Charles H. Andrews, secretary and treasurer of the Newcastle (Pa.) Mining and Clay Products Company, one of the largest orders ever closed by that plant has been secured from the Toledo, O., school board for 600,000 heather tex brick, a new design recently perfected by the local company. The order will keep the local plant busy for some time.

The Keystone Pottery Company of Zanesville, was incorporated in Columbus recently by F. H. Werner, of this city; J. D. Moore, of Detroit; Z. W. Burkley and Wilson Werner, of Crooksville, for \$25,000. The company will act as distributors for the output of the American Clay Products Company and will erect a large warehouse in Pittsburgh at an early date.

Wheeling men, largely owners of the Florentine Pottery Co., at Cambridge, O., have announced the sale of the plant to the Pfau Manufacturing Co., of Cincinnati. The price is said to have been approximately \$300,000. The new purchasers, it is announced, propose to manufacture in the plant a full line of plumbers' porcelain supplies. A. BUCKEYE.



PERFECT CLAY SCREEN

25 Years Daily Service

And still at it, are the records of many PERFECT CLAY SCREENS, producing a satisfactory product which insures better and more uniform drying, burning, with greater per cent of high grade finished product. SAVES FUEL and LABOR, and is positively the only SCREEN ADJUSTABLE TO THE VARIATIONS OF CLAY FROM DAY TO DAY. NO VIBRATIONS. NO NOISE. FIRST COST AND UPKEEP VERY LOW and every Screen absolutely guaranteed satisfactory.

Write and ask how much saving we can promise you.

DUNLAP MANUFACTURING CO.

Bloomington, Ill.

WHY

DO OPERATORS OF
DRY PANS, WET PANS, CRUSHERS,
SEWER PIPE AND TILE
MACHINERY

PREFER

STEVENSON EQUIPMENT

THERE'S A REASON

A LIST OF NEAREST USERS ON REQUEST
ASK THEM

THE STEVENSON COMPANY

GENERAL OFFICES
AND
WORKS
Wellsville - - Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING
Chicago - - - Illinois

Written for The Clay-Worker.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and other towns in Southern Indiana are picking up and have been active for this season of the year. The contractors and brick manufacturers believe that 1922 will be a better year for building than last year. There is already some construction work under way in Evansville and a great deal more has been planned for the coming spring and summer. One real estate company in Evansville has planned to build one hundred new homes during the coming season for workingmen and they will cost from \$1,800 to \$2,000 apiece. Several building projects are under consideration. The new building for the First Baptist Church at Evansville has just been completed at a cost of more than \$150,000. A good many church and school buildings have been planned for the coming years in towns in Southern Indiana, Southern Illinois and Western and Northern Kentucky. The outlook is bright at this time and brick manufacturers are optimistic over the outlook.

At a meeting of the bricklayers' union at Evansville a few days ago with the contractors, it was agreed to continue the wage scale in effect in 1921 for the present year, and contracts made to that effect. The move was made in the interest of building operations that the housing shortage may be alleviated and more men employed in all lines of the industry. Fred Zahn, president of the union, was authorized to make the announcement of the wage agreement. The bricklayers' union of Evansville has started a campaign to boost the building of brick homes, Mr. Zahn has announced.

Meetings between contractors and brick contractors and brick contractors and bricklayers will be held within a short time, it is said, to arrange plans for the boosting of brick buildings.

Forty acres of additional clay land has been acquired by the Standard Brick Company of Evansville from Alois Heer-dink and wife. The ground, according to John Andres, secretary and treasurer of the company, adjoins the present holdings of the company and was acquired in anticipation of need of more brick clay in the future.

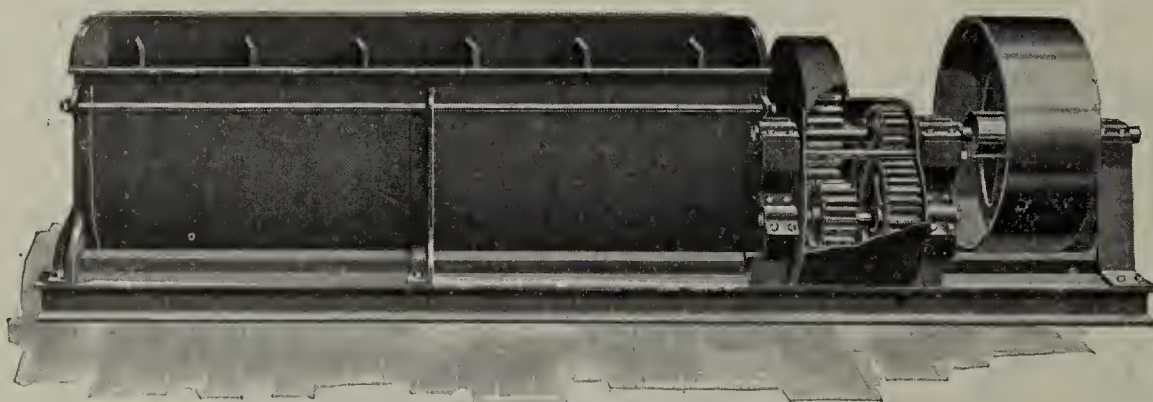
Reports from Petersburg, Shoals, Vincennes, Boonville and many other towns in Southern Indiana are to the effect that there will be a good deal of building done during the present year. There is a shortage of dwellings reported in many towns in this section and as a result rents are higher than they have been in many years. During the past year or so many buildings and loan associations have been formed in Southern Indiana towns to assist in the building of homes.

Aaron M. Weil, head of a large pottery manufacturing company at Evansville, has been seriously ill at his rooms in the New Vendome Hotel for the past several weeks.

It is expected that there will be considerable work done on the Evansville and French Lick market highway during the present year. The Evansville-Boonville stretch of this road has been opened to the public. It is the first improved highway of its kind ever built in Southern Indiana.

Potteries at Evansville are being operated on a fair time now and it is expected that 1922 will bring in a larger volume of trade than during the past year. The potteries at Evansville are among the largest industries of that city and they employ a large number of men at high wages.

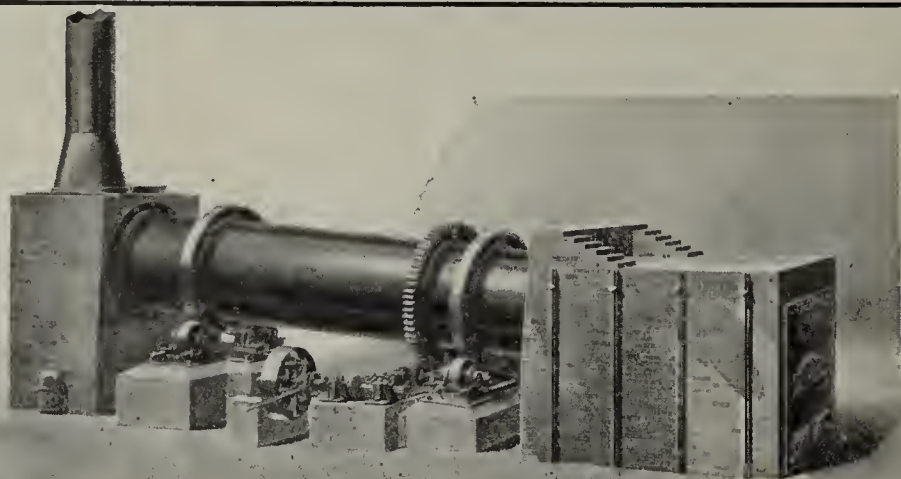
A. HOOSIER.



TORONTO PUG MILLS

Built in either double or single geared models, any length from 10'0" to 14'0"
Send us your inquiries.

Toronto Foundry & Mach. Co.
Toronto, Ohio.



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

By using this system you can reduce your fuel cost and your labor cost. You can increase the amount of first grade ware. You can raise the selling value of all your ware. It will make more money for you than you have ever made per year before. If you doubt these statements go and see for yourself and be convinced. As a matter of education in burning clay ware visit the following plants:

U. S. Brick Co.	Tell City, Ind.
Huntingburg Pressed Brick Co.	Huntingburg, Ind.
Standard Brick Mfg. Co.	Evansville, Ind.
The Best Brick Co.	Evansville, Ind.
Kalamazoo Clay Co.	Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U.S.A.

Written for THE CLAY-WORKER.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAY-WORKING INDUSTRY.



THE DEPARTMENT OF COMMERCE has just issued an interesting analysis of our foreign trade in ceramics, both exports and imports, as well as a general review of such ceramic trade of various other countries. In the line of pottery and ceramics, according to the department's statement, we are taking close to half of the total exports of Japan, which amounted to about 16,000,000 yen in the last nine months of 1921, over 7,500,000 yen coming to the United States.

Brick manufacturers in England, who experienced very backward trade, both domestic and foreign, in the first nine months of 1921, are now showing a considerable increase in operations, with a return to more stable producing conditions. Exports of common and fire brick in October, November and December, 1921, increased nearly 33 per cent over those for the same period of 1920, while at the opening of the present year all indications pointed to still better conditions, especially in export trade. A large item in British exports during the last half of 1921 was the shipment of terra cotta bricks and pipes to the Netherlands, which trade is expected to continue through this year in good volume.

Building brick of the cheaper grades are reported to be selling by British manufacturers to Belgium in considerable quantity. It is reported that a commission of English brick manufacturers has just returned from Belgium, following a survey of the possible trade field there and a consultation with the Belgian government. It is believed that the conference had to do with the proposed governmental aid for reconstruction in the devastated regions.

In view of the fact that Belgium has been suggested to our United States brick manufacturers as a most promising present market, it will be interesting to glance at the record of Belgium's imports in bricks and related lines, which are given as follows:

	Imports.	
	Jan.-Sept., 1920.	Jan.-Sept., 1921.
Pottery.	Kilos.	Kilos.
Earthenware, fine (except tiles)...	2,592,890	3,405,721
Chinaware (except tiles)	668,743	1,065,216
Terra Cotta:		
Bricks, drainage pipes, etc.....	41,806,517	75,171,989
Tiles—		
Varnished or enameled and tongued-and-grooved	2,178,970	4,582,965
Other	2,000,537	531,115
Paving and building blocks and tiles:		
Of earthenware or stoneware	443,343	272,783
Of concrete	225,397	75,396
Of fine earthenware or china	132,385	184,940
Not specified	166,121	451,350
Common pottery	1,758,432	1,892,900
Total quantity	51,973,245	87,634,375
	Francs.	Francs.
Total value	24,619,360	27,947,507

The United States exported pottery and clay products in 1921 valued at \$6,279,587, something like \$3,000,000 less than 1920, while the imports were \$12,523,436, an increase of nearly \$1,000,000 over the previous year.

Ninety-three road construction projects in 28 states were approved for federal aid during the month of November, by the Bureau of Public Roads, Department of Agriculture. Practically every type of road construction is represented in the approved projects. The longest stretch of road approved

in one project during the month stated was an earth road in Calhoun County, Mississippi, over 35 miles, while the shortest was a brick road in Stark County, Ohio.

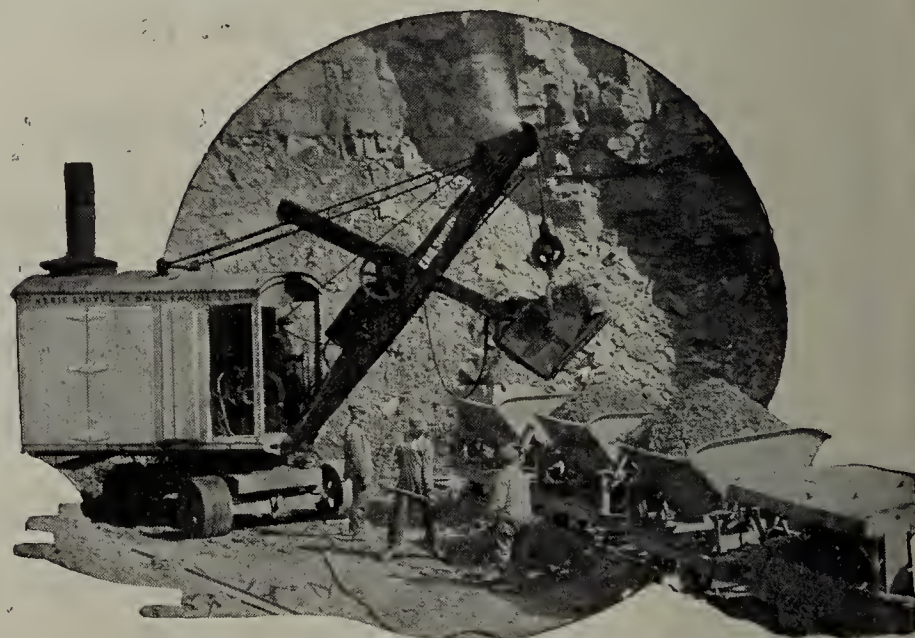
It is said that in Pennsylvania, Kansas and Missouri—seventeen road projects in all—a considerable percentage of the material to be used will be brick.

In order that work will not be delayed pending the approval of each state system the secretary of agriculture has amended the rules and regulations for federal aid to permit the immediate construction of such roads as may reasonably be anticipated will become part of the system.

The meeting of the Committee on Refractories of the Federal Specifications Board, held at the Bureau of Standards, was attended by representatives of all the government departments most concerned with the purchase of this class of material. The policy of using, so far as possible, the standard shapes of the Refractories Manufacturers' Association was recommended. After a long discussion on the question of specifications it was voted to ask the Bureau of Standards to prepare a set of specifications which the advisory board could submit to their respective departments for criticism. The vote on this motion would have been unanimous, but for one member who had come to the conference instructed to the contrary.

ALTHOMAR.

It would not be a bad idea to plant a goodly crop of those "Build with Brick" signs about the landscape of the country this spring, for like brick they have permanent good qualities.



"DIGS OUR SHALE IN HALF THE TIME,"

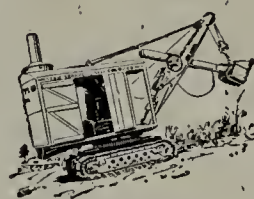
writes *Emmett Poston, Mgr. Poston Brick Co., Springfield, Ill.:*

"With 5 men, the ERIE gives us plenty of shale to keep our plant running full capacity, and does a day's work of 11 men in 5 hours. And it has reduced our dynamite costs 90%. The ERIE has certainly proven a sound investment for tough shale digging."

Savings like these will increase your profits—and the ERIE's steady reliability will assure you raw material whenever needed. The ERIE is built much stronger than other shovels of its size. Up-keep expense is negligible.

We would like to send you a bulletin full of facts and photos, showing just what the ERIE can do in getting out your clay and shale. Write for Bulletin W-16.

BALL ENGINE CO., Erie, Pa., U. S. A.
Builders of ERIE Steam and Locomotive Cranes.



ERIE Shovels can be had with broad tired traction wheels, standard gauge car wheels, or on the ERIE lubricated caterpillar type mounting. All interchangeable on the same truck frame.

ERIE Revolving Shovels





Brick Made Six Thousand Year Ago Mark The Ancient City of Babylon

The earliest burnt bricks known were made by the Babylonians more than 6,000 years ago.

The site of the ancient city of Babylon is still marked by huge mounds of bricks, the ruins of its great towers and walls. For centuries it has been the custom to carry away these bricks for the building of modern towns nearby.

It pays to remember that bricks made 6,000 years ago are still suitable for use as building material.

In this age of many new and varied building materials there is an occasional tendency to swing away from tried and true brick.

Brick will be increasingly used each year by reason of the interest and activities of brick manufacturers who at all times aggressively call attention to its many superiorities. They constantly improve their product, do everything possible to make prices more attractive and continually remember that the architect's and consumer's tastes govern the building contractor's choice.

They make them think of **BRICK FIRST.**

WHAT ONE MAN CAN DO

One man can—in fact is only needed—to operate the AutoBrik Machine. The AutoBrik just automatically speaking, eliminates the balance of the crew. The AutoBrik performs the work of dumping and pressing the clay, bumping the moulds with absolute uniformity, dumping the brick on pallets, delivering the pallets of brick to truckers or to a cable conveyer and putting the empty moulds into the sander, where they are properly sanded and are automatically delivered to the machine to be refilled.

No wonder the AutoBrik Machine is now cutting over-head, increasing profits and stimulating demand for a large and increasing number of brick manufacturers throughout the country—when you realize fully what **one man can accomplish** with the

AutoBrik

Further interesting detailed information about the AUTOBRIK will be sent upon request.

Machine

LANCASTER IRON WORKS, Inc.

Lancaster, Pennsylvania, U.S.A.

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.

Mention THE CLAY-WORKER.

MARTINIQUE



NEW YORK

THE famous name Martinique is restored to this great New York hotel. But it is a *new* Martinique—new in decoration, in furnishing and in management. The charges are genuinely moderate.

Pleasant rooms as low as \$2.50. Popular club breakfasts from 45 cents to \$1.00. Substantial luncheons and dinners at \$1.25 and \$1.75 and a well prepared and quickly served selection of satisfying dishes a la carte at new prices. *Affiliated with Hotel McAlpin.*

Frank E. Jago, Resident Manager



32nd Street and Broadway

Written for THE CLAY-WORKER.

NOTES FROM DIXIELAND.



BRICK, terra cotta, pottery and clay industries in and around Memphis anticipate that 1922 will be a good one. Many plans for new construction work have been drawn which seems to substantiate this expectation. There is a considerable amount of unfinished building that was started late in the old year. Bungalow construction with brick veneer are face brick brick, store fronts with handsome white tile effects, office buildings, churches and schools, clubs and hospitals constitute items that are prominently before the eye of architects, contractors and builders now. Memphis building figures for December surpassed all the Southern cities and for the year 1921 topped all the Southern cities with the exception of Atlanta. Though it may be added that a great many of the larger cities in the South and some of the smaller ones made excellent showings in building. The roofing work and decorative features will be important items and for warehouses and other construction common brick will be in good request by spring. Drainage and sewerage work will precipitate a good activity in drainage tile and sewer pipe.

Building Commissioner Dan Newton recently submitted his 1921 report to Commissioner Horace Johnson, 3,806 permits were issued with a total valuation of \$9,377,025. It was the best year in Memphis since 1919.

Apartment buildings, 29; dwelling houses, 238; private garages and servant rooms, 279; stores and apartments, 12; public garages and auto service, 10; industrial buildings, 24; warehouses, 30; amusement buildings, 9; churches, etc., 17; hospitals and institutions and additions, 4; public buildings, 3. The list of brick dwellings was 28.

The bids were opened Jan. 3, for the Municipal Auditorium and Market, but all were above the amount authorized. The James Alexander Construction Co., of Memphis, made the lowest, \$1,497,000, not including interior equipment or plumbing. The highest was made by the Ohio Building and Construction Co., \$2,094,652. Only six bids were made on the superstructure. The plans will possibly be modified to some extent. The papers and figures were referred to C. O. Pfeil, architect, and W. F. Schulz, engineer. The exterior of the structure is to be of light brick, with Bedford stone trimmings and tile roof.

The Builders' Exchange at Memphis has elected and installed new officers: George C. Kaucher, Exchange Bldg., president, heading the blue ticket and defeating F. L. McKnight on the red ticket; Wm. Rikey won out over S. Brandes for vice-president. A. L. Pritchard is the retiring president. M. L. Black was elected second vice-president; J. W. Williamson, re-elected treasurer; E. W. G. Meers is secretary. Refreshments and a good musical orchestra were features of the election. The exchange was quite active in the entertainment of the national convention held in Memphis at Hotel Chisca, Feb. 20-23, of the National Association of Builders' Exchanges.

It is understood that the recommendations have been approved for the purchase of the new Methodist Hospital at Memphis on Lamar boulevard, for the Government's War Veterans' Hospital, which means when consummated that the Methodists in turn will erect a new one immediately.

The plans for the Jewish Hospital to be erected on Poplar boulevard, are being prepared by Chicago architects and bids will be received in January.

At Chattanooga, a charter was recently filed for the Crane Enamelware Co., a \$2,000,000 corporation, which will absorb

the Cahill Iron Co. and operate the largest bathtub factory or porcelain goods, etc., in the country. Frank H. Caldwell, J. J. Mahoney, W. P. Mahoney, Hollis Caldwell and others are the incorporators.

A 48-room apartment building is to be constructed by S. Malkin on South Cleveland street, Memphis, and to front on Cleveland, Vance and Liden streets; fireproof, brick construction and many modern devices.

A 21-story skyscraper at Maiden Lane and Court avenue, is to be erected in Memphis by Brinkley Snowden and associates. The plans will be pushed to completion at once by Architects Hanker and Cairns. The building will be of white tile exterior, marble and hardwood interior appointments, some 4,800 square feet of space on each floor, and the tallest structure in the city.

DIXIE.

DRYER CARS.

Frank H. Robinson, Pittsburgh, Pa., has issued a supplement to his catalog, "Bulletin No. 1," which tells of the dryer cars and other clay equipment which he offers to the trade. Many years of experience in the manufacture and sale of this line of brick and tile yard supplies, enables Mr. Robinson to meet every requirement. Bulletin No. 1 illustrates the Robinson line of dryer cars, also dryer car lubricant, Lakewood flexible bearings, etc. They also offer a line of kiln bands for round down draft kilns, which together with their steel rails, portable tracks and other equipment can be shipped from stock. For quotations or other desired information, address Frank H. Robinson, 918 Behan St., N. S., Pittsburgh, Pa. See ad on back cover page of this issue.

Nations, like people, most all want to do what they think is right, but the big trouble is lack of standardization and harmony with the thinking equipment.

Written for THE CLAY-WORKER.

NATIONAL ASSOCIATION BUILDERS' EXCHANGES HOLD SUCCESSFUL CONVENTION.

BEFORE CONCLUDING its work in Memphis Friday, February 24th, the eleventh annual convention of the National Association of Builders' Exchanges selected Des Moines, Iowa, as the 1923 convention city. President-elect Guy C. Mills issued a formal statement of appreciation to the Memphis hosts and outlined somewhat the plans for the coming year's work. Earl Stokes, secretary, re-elected to that position, will follow the president to Webster City, Ia., and establish his headquarters there for the coming year. Last year the national headquarters were in Atlanta, Ga. Mr. Stokes was formerly secretary of the Builders' Exchange of Erie, Pa. The banquet on Thursday night at Hotel Chisca was a sumptuous event. Geo. C. Kaucher, president of the Memphis Builders' Exchange was master of ceremonies. Many of the delegates, before returning to their homes, will take side trips to New Orleans, attending Mardi Gras, Muscle Shoals in Alabama, Hot Springs, Ark., the Little Rock Exchange putting on a special trip to the latter place for the Western guests as they pass through the city and El Dorado, the noted oil town of Arkansas.

The completed list of officers is: Guy C. Mills, Webster City, Ia., president; W. C. Chew, Baltimore, first vice-president; E. J. Thomas, Memphis, second vice-president; Earl Stokes, of Atlanta, Ga., secretary. Board of control: Max Maumann, New York City; John V. Beekman, Boston; W. F. Kucharo, Cedar Rapids, Ia.; C. C. Pierson, Indianapolis; E. W. Reaugh, Cleveland, O.; Walter McGarvey, Cincinnati; R. L. Reisinger, Milwaukee; J. D. Stoddard, Detroit; W. L. Ragland, Richmond; D. T. Riffle, Pittsburgh, and Chas. Wm. Bernhardt, Atlanta, Ga.

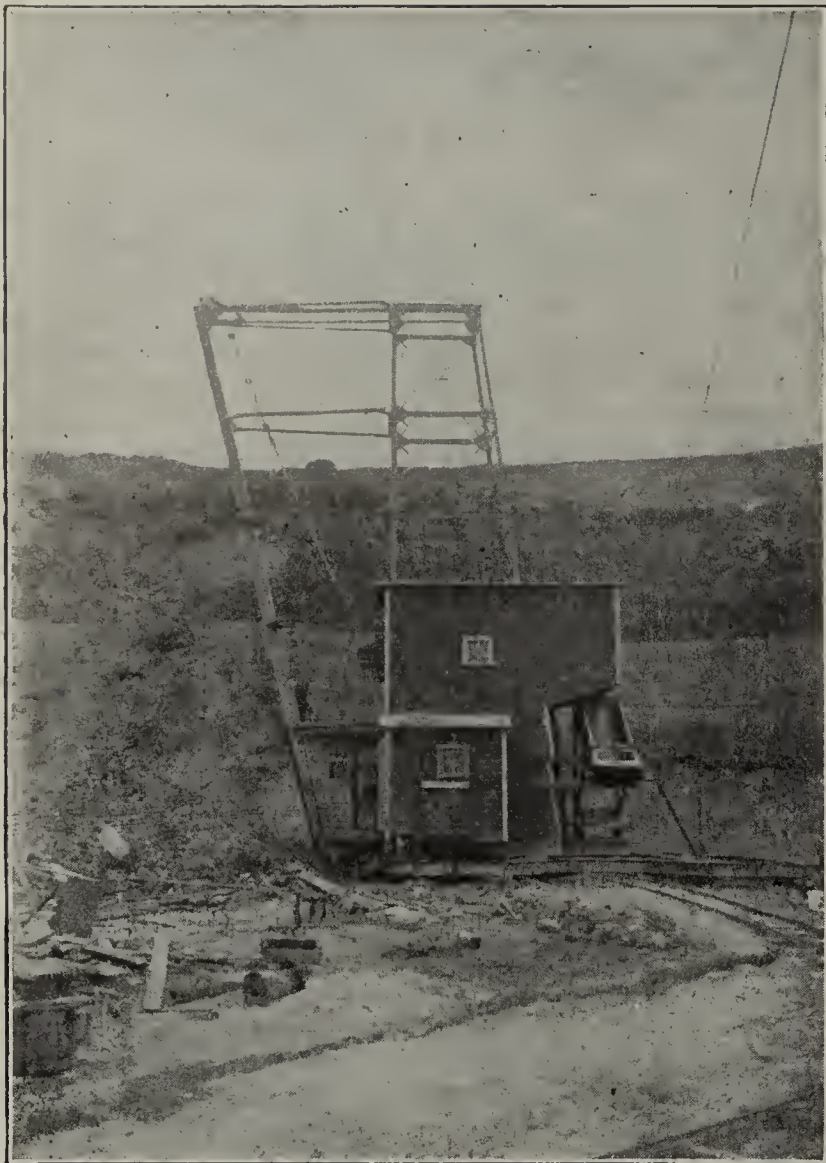
Unloading Costs Quartered by "Columbus" Automatic



Savings of from 50% to 75% are common experience of users of "Columbus" Automatic Unloader, which taken together with uninterrupted service, is a big factor in reducing overhead to a minimum.

If you are interested in material handling machinery, including receiving hoppers, plate feeders, crushers, bucket elevators, belt conveyors, malleable or steel buckets, chains, chutes, portable car unloaders, write for our latest catalog and quotations.

The Columbus Conveyor Co., Columbus, O.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use
of power and labor.

Cuts out the Powder Bill and danger
from the use of Explosives.

But best of all, it secures a perfect
mixture of the clay stratas, and you all
know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and
write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS FROM CINCINNATI.

BUILDING operations at the present time in Cincinnati are progressing slowly but surely and while the outlook for spring and summer is good, the large brick manufacturers of this city do not look for such a boom as would cause a shortage of labor.

A good reasonable business is expected. This expectation is based on the large contracts already let, the building operations now in progress and the other "sure" projects.

John P. Turpen, recently elected president of the Cincinnati Brick Club, returned Feb. 12, from a business trip.

E. M. Craig, representative of the Building Construction Employers' Association of Chicago, was the chief speaker at the first annual banquet of the Associated Building Industries in the Sinton Hotel recently. He declared that the majority of Chicago contractors had agreed not to let any contracts of any kind unless based on the award made by Judge Landis which he said permits of a living scale, the average working getting 96 cents an hour.

Word has been received in Cincinnati of the death of Samuel J. Scott, 74 years old, retired Cincinnati pottery manufacturer, at the Masonic Home in Springfield, O. Mr. Scott, previous to his retirement, was in the pottery business in Cincinnati virtually all his life. He succeeded his father as head of the old Sam Scott Pottery works. A widow survives him.

Approximately \$200,000 is involved in a plan for the construction of a public garage in the heart of the business district. A company will soon be incorporated, to be known as the Auto Hotel Company, which has purchased the property, 310 to 314 Walnut street. The company's architect, C. G. Preis, New York City, is preparing plans which call for a modern storage garage with a capacity of 200 cars.

The Builders' Exchange as an institution has passed out of existence and has been succeeded by the Associated Building Industries. This is the result of the merger last year between the former organization and the Building Construction Employers' Association. The officers of the Associated Buildings Industries, which has just been incorporated, are David Devore, president; William Harig, William H. Miller, John E. Devere and Jacob Warm, vice-president; William J. Pugh, treasurer, and A. E. Otte, secretary.

Peace has been restored between the union bricklayers and the employers, at least until May 1, 1922, according to Charles A. Midlam, business agent of the Bricklayers' union. The men are now working at the scale of \$1.25 an hour and employers have agreed to let this wage remain in force until the contract between the union and employers expires, May 1, 1922. When the wages of other building trades were cut by the Wage board, the employers tried to cut bricklayers to \$1.12½ per hour.

The Cincinnati Business Men's Club will seek bids at once for the construction of the organization's new club house, which has been held up two years by financial and labor difficulties, according to an announcement by President John H. Dickerson. The new club house, 11 stories high, will be at the northeast corner of Race street and Garfield place. The cost is estimated at \$2,000,000.

Announcement has just been made that actual work on the new 15-story structure which Rollman & Sons Company will erect at the northwest corner of Fifth and Vine streets, will begin about June 1. The improvement has been in contemplation for more than a year.

Harvey E. Hannaford, member of the firm of Samuel Hannaford & Sons, architects, was removed to Christ Hospital, Feb. 8, suffering from a severe attack of heart disease. Mr. Hannaford is one of Cincinnati's best known architects and a number of the city's most imposing structures were built under his supervision, the Cincinnati General Hospital, being among them.

CINCY.

Written for THE CLAY-WORKER.

THE NEW YORK STATE SITUATION.



FROM THE FIGURES now being advanced regarding the building records of 1921, it is very plain the material that is the leader in the construction industry throughout this section is brick. For some time past there has been a great deal of comment regarding the number that has actually been used. The leadership has naturally fallen to the basic of all building materials, and it is so titled with "brick."

To one moving around in the centers themselves there appears to be not much activity and the general feeling is dullness. The dealers themselves are not over enthusiastic. They are selling, but not in quantities as compared with past performances. Exceptional cases exist in various parts and one may get an order for a good sized quantity with the follow-up order not of any size. In other words there seems to be a fluctuation.

The reserve stock of brick in the dealers' hands, while not of abnormal proportions, may in some cases look very small. Some factors connected with the brick industry who were far-sighted enough to foresee a season of poor supply put some stock into reserve. Today they are the winners. With the main source of supply in a frozen state, the larger part of the brokers will have to depend upon rail transportation. Motor delivery is not good in this section of the country at the present time, due to the heavy falls of snow followed by sleet and rain, which causes small deliveries, and in some cases, no deliveries.

The prices of the basic commodity do not change to any great extent. Some dealers are getting in the neighborhood of \$19 for commons delivered, or about \$15 at the yard. This can be accounted for by the supply and demand. Others may not receive this amount, but they come very close to it, a dollar or two one way or the other, which is but a minor difference. The price of tile remains about the same as previously quoted, the figures ranging between twelve and twenty cents for the most wanted sizes. There is more or less of a constant demand for this product as the main part of the building must be constructed of a non-fusible material. Face brick holds its own at the former levels with the wanted colors staying with the darks and some call for the lighter shades. Price ranges are between forty and sixty dollars, including smooth and rough texture in the desired colors, depending upon the source of supply and the quantity needed.

It has been reported that a new brick company has been organized in this state to be known as the North River Brick Company with a capitalization of \$50,000. The new concern will manufacture common brick. F. Raab, F. Dunovitch, and N. M. Sherower are the heads. They will be represented by Joseph, Dunvo & Feinstein, at 277 Broadway, New York.

Plans have been completed for the erection of a new plant for the Perfect Brick & Hollow Tile Co., of 188 Montague street, Brooklyn. The project consists of a one-story plant to be erected on Grand street, with the proposed cost placed in the neighborhood of \$30,000.

It has been said by a prominent brick man of this section that the total output of brick for this section for 1921 was 40 per cent greater than for 1920. This remark was spoken of the Fall River district in Brooklyn, but he says the stock is less than it was a year ago. Many dealers disposed of their stock early in anticipation of labor troubles during the first part of the year. At present there are only three or four plants operating in this district, the balance having closed down for the season. The plants that are now in operation have facilities for artificial drying. This is good as it enables the plant to operate throughout the winter months. It is found mostly in the more modern plants, as many of the older manufacturers hesitate to install the equipment due to the excessive cost.

A. L. B.

A REAL TREAT

IS IN STORE FOR THE
READERS OF THE CLAY-WORKER

The March Issue

will contain many valuable articles of particular interest to the clay craft at this time.

Mr. Paving Brick Manufacturer:
Mr. Drain Tile Manufacturer:

You will be deeply interested in the article--

Importance of Subdrainage
in Good Road Construction.

Mr. Brick Maker:

There are a number of articles in the March issue you will fully appreciate.

Our Canadian Readers

will also enjoy special articles of interest to them.

In Fact,

all of our Readers will find much of profit and pleasure in the splendid March issue.

In the Mail March 20th

At Kalo Brick & Tile Co's Fort Dodge, Iowa Plant

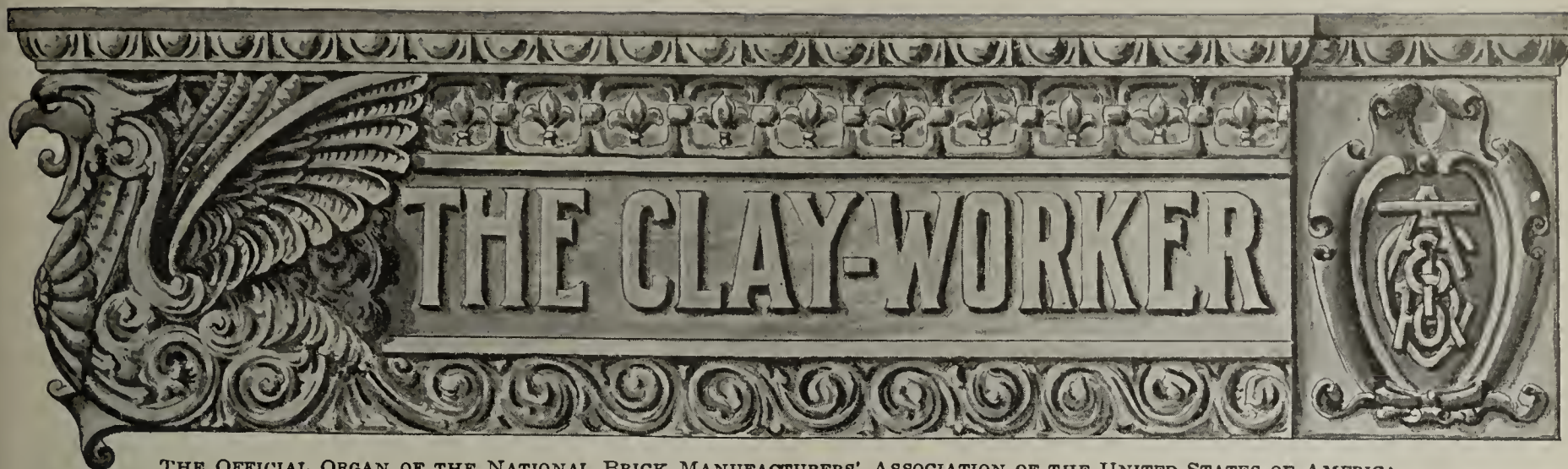
No wonder he smiles—putting this Brown Thermo-couple in place assures him a perfect burn with no worries. Your burner will smile too if he has a Brown Pyrometer.

Write for Catalogue No. 2 to the Brown Instrument Company, 4514 Wayne Ave., Philadelphia, or to New York, Pittsburgh, Detroit, Chicago, St. Louis, San Francisco, Los Angeles or Montreal.



Brown Pyrometers

Most used in the world



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 77

INDIANAPOLIS, MARCH 1922.

No. 4

CORN AS FUEL: What an Enterprising Iowa Clay Products Manufacturing Concern is Doing to Lower Price of Coal in General, and Increase the Price of Corn for His Farmer Customers, in Particular.

THERE HAS BEEN quite a hullabaloo over the use of corn as fuel, not only for domestic use by the farmers themselves, but by industrial concerns for commercial purposes. The argument against such practice generally centered on the fact that there are millions of starving people in Russia and other foreign countries that could be saved if the surplus corn was shipped across to them.

This is a good argument in itself, but there are many angles to the question that the would-be humanitarians do not consider in their hue and cry against the burning up of the over-supply of corn, the price of which during the past year has been so low that there was no profit at all in it for the farmer. The high freight rates and cost of exporting the corn and the inability of foreign countries to pay the cost of transportation alone, are the very good reasons why the corn had to have some outlet outside of the export business.

The price of coal was so high and the freight rates and cost of handling so exorbitant and unfair in comparison to the price the farmer could secure for his crop that it was but natural that he substituted corn for coal as domestic fuel.

Many industrial concerns have burned corn, finding it had almost an equivalent value in heat units with certain grades of coal. Of course this is simply a temporary proposition that

must be eliminated as soon as the over-supply is exhausted, at which time the price of corn will raise to a point where coal will be more economical as a fuel.

The Adel Clay Products Company of Adel, Iowa, has been using corn in the firing of their kilns for many months past and have issued some very clever advertising material in this connection. The illustration on our front cover page shows the kiln being fired with corn.

Mr. H. R. Straight of Adel Clay Products Company, gave a very good slant on his reasons for using corn as a substitute fuel in an interview which appeared in the Des Moines Sunday Register, as follows:

"No one ever protested on economic grounds against the consumption of millions of bushels of corn annually in the distilleries,"

"Industrial alcohol is still made from corn and a great deal of this alcohol is burned for various purposes. If industrial alcohol made from corn was burned in a tractor instead of gasoline, surely no one would say it was wrong."

The government having encouraged the farmer to

increase production during the war, the only way to sell the oversupply at a price that it cost to produce it is to encourage the use of corn in other ways than customary. But Mr. Straight is strongly opposed to using it to make alcohol.

PERMANENCY PAYS.

"The need of more permanent buildings is apparent everywhere. Flimsy farm buildings erected twenty years ago are in most cases simply scrap heaps. Our 'Irontile' for buildings are furnished with a life insurance policy covering a generation and are just beginning to look their best when mellowed by the weather at the end of the generation."

"When the farmer," says Mr. Straight, "can save handling and hauling to market and the hauling of coal home, keep his money in this own community and help to relieve his bankrupting situation, it surely seems to me that it is right to do so. Since everyone in Iowa is indirectly dependent on the farmer, it seems quite evident that anything that any of us can do to decrease the excessive supply will mean money in all of our pockets in the long run.

Other Wastes.

"No one ever severely criticized the farmer for wasting a good percentage of corn fed to hogs on the bare ground instead of on a masonry platform, where it is all saved. Who ever heard of telling the farmer that he was doing an economic wrong by feeding his stock in a cold barn or without adequate shelter and thereby wasting a good part of his feed? If the writers against burning of corn think it is such a sin, why don't they go after the rats, which eat enough corn, which if burned, would heat hundreds of homes.

"The photograph I am enclosing shows how corn was burned at the plant of the Adel Clay Products Company with surprisingly successful results. The results were equivalent to that secured from the highest grade of eastern coal and the cost was but very little more. Since it is necessary to use eastern coal, low in sulphur content, to secure thorough vitrification and a uniform color, can any one say that it was economically wrong to use the corn instead?

"The war caused an over production of warships and war materials for peace time needs. No one would criticize the nations for making an agreement to junk a part of the warships at heavy losses.

A War Condition.

"Along the same general lines, corn was a war material and the over supply is a direct result of the war. Let us use it up to the best advantage so that the new crop, which will shortly be coming on, can be in demand at a price that will help to raise us out of the present financial chaos.

"Hard times in the east or in the extreme west had no great effect on Iowa during the depression of 1907 and 1914 because we didn't have more food products than the balance of the world needed. If we were now short, even 30 per cent of what we have on hand, it is my opinion that we would be getting a living return for the balance.

"I would say don't encourage the feeding of corn to hogs or we shall shortly have an over production of hogs selling at perhaps 3 cents. As it is now they are the last straw of hope for the farmer.

"Let us use up the corn in such a way as to save as much as possible of the freight, which is too high, on the corn, and also save the freight on and the cost of coal, both of which are far out of line with the value of farm products."

EXIT EMPLOYEES' BONUS.

Many bonus plans and ideas which served good purposes during the strenuous days have now been discarded, laid on the shelf or radically amended. Many of the bonus ideas were only intended for temporary use anyway in lieu of temporary wage advances and to make it easier for the adjustment period which we are now going through. These temporary bonus ideas are being laid aside partly because they were intended only to bridge over the interval of stress, and partly because there will be no great surplus from industry and business right away to dish out in bonus form. Eventually some of the ideas may be and probably should be developed into permanent institutions to encourage effort and reward the better talent. For the time being, however, the bonus

idea is yielding the center of the stage to ideas of how we may hold down costs to make more favorable prices on our products.

A STORY OF THE CREE INDIAN WAR PAINTS.

IT HAS BEEN the privilege of but very few white men to visit a remarkable deposit of highly colored clays, which nature has carefully concealed near the "Great Elbow" of the South Saskatchewan river in the province of Saskatchewan. It is through historical and not monetary reasons that the clays of the above deposit are interesting.

The Crees or plains Indians were undoubtedly the first to make the find, for they at least in latter years were the only

An Unusual Poster for Boosting Tile Sales.

ones that knew the exact location. Though the deposit is difficult of access, and in a measure hidden, the time or date of its discovery is even more securely locked and will likely ever so remain.

However, the legend as handed down, is to the effect that a brave was one day in such close pursuit of a ponderous shaggy buffalo that the latter, in his endeavor to escape, charged over a steep cliff or embankment, ploughing deep furrows in the soft earth on his way down. Not so with the brave's horse, upon reaching the brink he quite suddenly refused to follow, with the result that our huntsman was ungracefully catapulted through the air for some distance before landing face first into the sticky polychrome mud.

Not daunted in spirit he regained his horse and followed

the chase. Upon nearing his fellowmen, great was their consternation and fear, a brave had but shortly ridden away from them in his native garb and facial color, his horse had returned with a hideous figure upon its back whose face was so frightfully discolored, that to them it was only through the Great Spirit that such a transformation could have taken place.

Thus, in their minds, it was conceived that they had been the chosen ones to make use of this great and awe striking agent, that when properly used would put fear and trembling into the hearts of their enemies. Hence, from the unwelcome painting of our warrior, by nature, there sprang the use of the

FABLE OF BRICK CONSTRUCTION.

By Henry Love and Lon Jerome Smith.

ONCE UPON A TIME there lived a MAN who believed WOOD was the best BUILDING material in the world. And this MAN was very RICH and he owned a number of big WAREHOUSES where huge bales of COTTON were stored—and all his BUILDINGS were constructed of WOOD!

One night a CARELESS workman in one of the warehouses dropped a lighted CIGARETTE and within TWO hours, three of the big WOODEN buildings were DESTROYED by the FLAMES. And the rich MAN was very angry—and he DISCHARGED the WORKMAN—and then he built three NEW warehouses, BIGGER and BETTER than the old ones—BUT, these ALSO were constructed of WOOD—the FINEST quality obtainable—and they cost a VAST amount of MONEY!

SPARKS, from a locomotive, blown by a strong WIND onto the ROOF of one of the BUILDINGS, set the WAREHOUSE afire and for the SECOND time the rich man's storehouses were REDUCED to smouldering RUINS. And he CURSED the LOCOMOTIVE and SWORE he wouldn't build any MORE warehouses—and he was DISGUSTED with EVERYTHING—and he PITIED himself!

Then one day he met a FRIEND of his who was a building CONTRACTOR and he told him about the two FIRES that had cost him so DEARLY and the contractor LAUGHED and told the RICH man that he ought to know BETTER than to build his warehouses of WOOD. And he gave the rich man an ESTIMATE for the construction of three NEW warehouses—built of BRICK—with SOLID, substantial TILE ROOFS—and the rich man was PLEASED with the FIGURES because they were so REASONABLE—and he gave the contractor ORDERS to go ahead with the buildings.

And when they were COMPLETED, the rich man was highly SATISFIED. They looked good to the EYE—they were SOLIDLY built—and they were absolutely FIREPROOF—and the rich man stored THOUSANDS of bales of COTTON in them without the LEAST bit of FEAR. And he was highly SATISFIED—and praised the CONTRACTOR for his GOOD work—and the BRICK buildings have stood the WEAR and TEAR of the elements for YEARS—and are just as good TODAY as when they were built LONG AGO.

MORAL.

BUILD with BRICK—and be SAFE.

Indian's war paints in times of battle. The custom prevailed to as late a date as 1885 or the time of the Reihl rebellion. Many were the hundreds of Crees and other tribes that wore the paints from the Saskatchewan deposit during those blood reeking days.

The district near Cut Knife and Battleford saw the close of those rebellious days, thus it was there, for the last time that the redskins were to be seen in their favorite paints as they entered upon the final struggle.

For many years prior to the last stand of the Indians near Old Battleford, there had lived among them, as a trader, a

white man, who had often befriended and given good counsel, and had always been fair and honest in his dealings, so much so, that it was the desire of the Crees in latter years to reward him with some mark of their esteem or appreciation.

To the Indians there was nothing more highly prized and guarded than the old-time war paints of the "Great Elbow," so one day an old chief beckoned his white friend to follow and they rode out from Battleford over the restless sand dunes and rolling prairies to at last gaze upon bands or silk-like ribbons of bright vermillion, gorgeous yellow, a sombre slate and a pure white; thus, the return for good counsel and honesty was made.

It was with much pleasure and interest, during the past summer, that the writer, in company with the Indians' white friend, now an old man, made the pilgrimage and paid homage to the redman's sacred clay, it was there the story was told that is now recorded; though pages would be required to cover the tales of Indian lore related by the white-haired friend of the Crees, whose language he speaks with as much ease as he does English.

It was not in the sense or desire of desecration that a goodly supply of samples of the beautiful velvet-soft clays were taken, but to send them to the Ceramic Department of the Saskatchewan University, that their physical and chemical properties may be learned, and that samples of the raw material may be preserved for the eyes of the future.

W. G. WORCESTER.

WIDE ROADS NOW A NECESSITY

WHEN America first awoke to the necessity of highway improvement a few years back, the tremendous mileage of public roads requiring attention naturally seemed to dictate the desirability of building the narrowest pavements practical on the theory of providing the greatest possible hard surfaced mileage in the shortest possible time and at the least expense.

This theory has been proven to be fundamentally wrong. To properly serve its purpose today and in the future, any highway must be of adequate width. The reasons for this are well outlined by State Highway Commissioner H. E. Sisson of New York, in advising the people of Pennsylvania against the construction of roads less than 18 feet in width.

Commissioner Sisson's remarks are of general application. In part he said: "Some weeks ago I went into Pennsylvania on a mission of discovery. Shortly after I returned I received clippings from several Pennsylvania newspapers showing that agitation had been started for the construction of narrow roads, on the presumption that they would be cheaper to construct and, therefore, could be put down for a greater mileage. In other words, it was erroneously suggested that Pennsylvania could get twice as many miles of 9-foot roads as of 18-foot roads.

"New York State is not building 9-foot roads on new state highway construction. They are inadequate to carry modern traffic. In some instances we have built a single strip of concrete eight or nine feet wide on one side of the road, but with the intention of building a strip of the same width on the opposite side the following season. But in this case the entire roadway must be graded and culverts and the drainage system for a wide road installed. Therefore, the major portion of the cost of a wide road is expended at the time of the construction of a narrow road. The construction of half a road surface is an expensive proposition, as Pennsylvania would soon find out. The New York State Highway Department does not expect to design roads less than 16 feet in width in the future, except on thoroughfares of the least importance—and the trouble in this case is that heavy traffic follows improved highways, so that within a short time a minor hard-surfaced road becomes an important artery.

"Build your roads 18 feet wide and build the most important ones first. Counties in New York are building roads to connect with the main highways and they are doing a real job of it. The value of a minor road is only in the value that it gets out of the main road."

OFFICIAL PROCEEDINGS.



Annual Banquet of N. B. M. A. Held February 26th, Claypool Hotel, Indianapolis, a Glorious Event.

A GOOD DINNER, a fine audience that filled the Chateau dining room of the Claypool Hotel to overflowing, excellent music, both instrumental and vocal, and splendid oratory, all combined to make the annual banquet of the Thirty-sixth N. B. M. A. convention a most memorable occasion, a never to be forgotten incident by those who participated.

Secretary Randall: Ladies and gentlemen, if you will comfortably adjust yourselves, we will start on the real feast of the evening. I have found my four-leaf clover today. I am perhaps the happiest, proudest man in America. Some of you know I received a message this afternoon from the great and good President of the United States. It is a very unusual and most gratifying recognition of our Association. I am indeed very proud to be the messenger boy.

Greetings from President Harding.

The White House, Washington, D. C., 1241 P 26.

Theo. A. Randall, Secretary National Brick Manufacturers' Association, Indianapolis:

Please convey my sincere regrets that I cannot be present at the thirty-sixth annual banquet of your association tonight. I very greatly appreciate the unique and cordial invitation which you extended, and I wish sincerely it might have been possible for me to join you. Under the circumstances I can do no more than express my very cordial greetings and good wishes.

WARREN G. HARDING.

This is a splendid message, bringing to us as it does, the real cordial good will and best wishes from President Harding. It is in response to the presentation to him recently of a clay brick tablet inviting him to be with us at this banquet. He manifested unusual interest in the unique invitation and said to me: "This is very pleasing to me, for it brings back memories of my youth. When a boy I worked as off-bearer on a brick yard." So you see, like the rest of us, President Harding is a man of clay. We may all take just pride in his election as an honorary member of our Association.

"This night we hold an old accustomed feast
Whereto we have invited many a guest."

So reads our printed program. For many years I have cherished the wish that I might on an occasion like this introduce you, my friends from all parts of the country, to my personal friend and neighbor, Honorable Albert J. Beveridge, ex-United States Senator from Indiana. We have been friends many years, Albert and I. He made me happy when he consented to serve as toastmaster, for I knew you would be delighted to listen to his voice.

A few moments ago I picked up a little book, one of Riley's

books of poems, and my eye caught one of his quaint rhymes, "The Sphinx:"

"I know all about the Sphinx,
I know even what she thinks
Staring with her stony eyes
Up forever at the skies.
For last night I dreamed that she
Told me all the mystery—
Why for aeons mute she sat—
She was just cut out for that."

I am going to introduce to you as Toastmaster one who is no Sphinx, but one who is just "cut out" for the job. If I read the signs aright, he is going to again fill a job he has filled before with great honor and distinction. He is just "cut out" for that, too, and we Indiana Republicans are going to send him back to the United States Senate, where he belongs by virtue of his remarkable ability as a statesman. (Applause.) He is just "cut out" for that.

If you will pardon me, I want to reminisce—that, you know, is an old man's privilege. A good many years ago when Albert Beveridge was in the United States Senate, there was another Indianapolis man in Washington—a gentleman of the old school, Daniel Ransdell, who served for many years with remarkable efficiency as Sergeant-at-Arms of the Senate. One time while there I called on Uncle Dan'l as usual. I found him a little bit peeved over some of the slipshod methods in vogue there. He himself was a painstaking man. He said, "Theodore, the situation here is very uncomfortable in that there are so many here drawing good salaries and doing so little. All the real work of this great deliberative body is done by a dozen men, and there is just one man here in the Senate who is doing more than any three other men here, and that one man is Albert J. Beveridge (applause).

Later on I had another unusual and interesting experience in Washington. I was sent there in the interest of our Association regarding an appointment in one of the departments in which we were interested. I called on Senator Beveridge and told him my mission, and he said, "you had better see the President." He called his secretary and said, "Call the White House and make an appointment with the President for Mr. Randall. Tell the President I will come with him." It was done, and at the appointed time, accompanied by Will Gates of Chicago, we were ushered into the Presidents' private room. After the usual introduction I told President Roosevelt as briefly as I could what we wanted and he, with equal directness said: "The matter is connected with the department of which Gifford Pinchot is in charge. If you will go to him, explain the situation, I am sure he will grant your request. You will find Gifford a fine fellow." I did as directed, and the desired appointment was made.

The colonel shook hands and said "good bye" and turned to join Secretary Taft, who was sitting near by. I again said, "Mr. President, there is another favor I would like to ask." He turned with that great smile of his. I have always believed he divined what I was going to say. It was already rumored that Taft was to be the presidential nominee. I said, "Mr. President, can't you make that ticket 'Beveridge and Taft?'" The colonel's smile broadened, but he said not a word. Albert stepped on my toe, gave me a punch in the ribs and we bowed ourselves out. As we walked out through the White House grounds, Albert said, "Theodore, what in the name of thunder made you say that to the President?" I replied, "Albert, I said what was in my heart, and if you live and I live I expect some day to see you in the White House." (Applause.) I still cherish that fond hope. That is another job our toastmaster is "cut out" for.

Ladies, gentlemen, friends, you can scarcely appreciate the pleasure it gives me to introduce as the toastmaster of the evening my good friend, Albert J. Beveridge. The lines, I

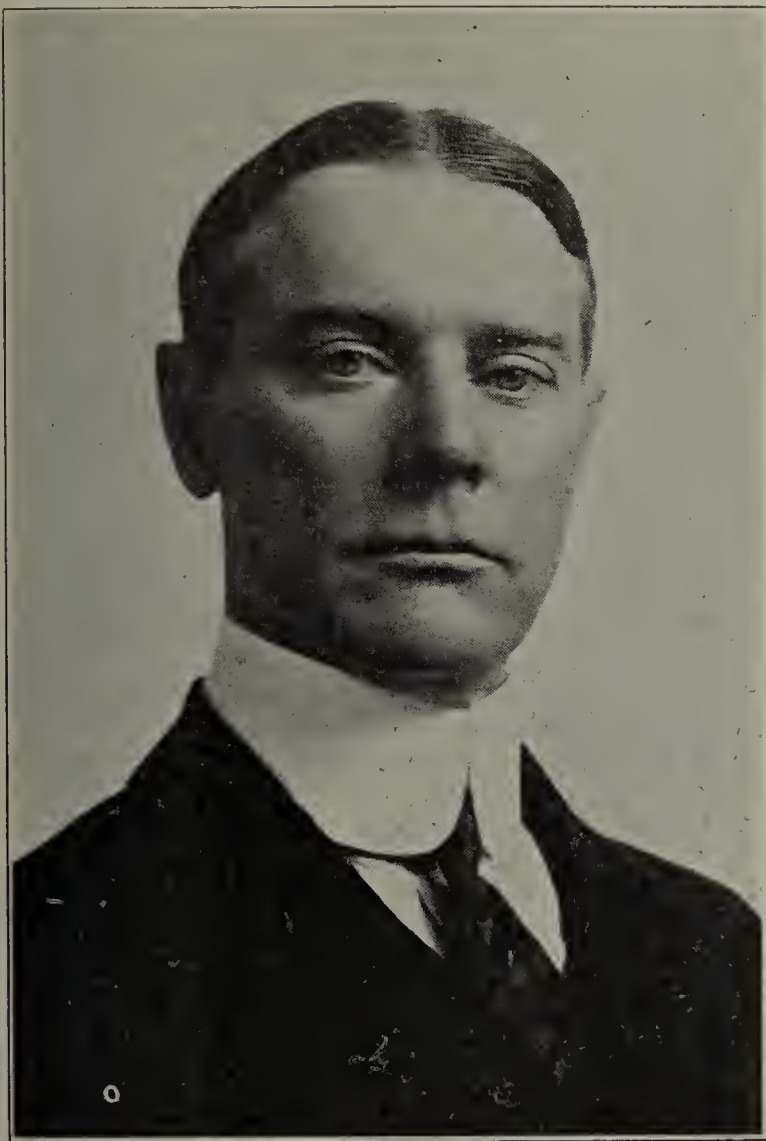
again quote from our printed toast list, fit him exactly. (Prolonged applause.)

"He is the kind of a man for you and me:
He faces the world unflinchingly,
He strikes straight out for the right—and he
Is the kind of a man for you and me."

TOASTMASTER BEVERIDGE'S INTRODUCTORY.

Toastmaster Beveridge: Ladies and gentlemen, it is very nice indeed for Mr. Randall to say these pleasant things about me. I wish I deserved them, but although I know I do not, I am much obliged to him for having said them.

I am very glad indeed to be able to be here, and I consider it a great distinction to preside as toastmaster over this notable banquet. I was delighted to come because Mr. Randall asked me. We are dear friends; I feel like saying, and I mean



Honorable Albert J. Beveridge.

it, that in no land is a better business man, and in the whole world not a better friend than Theodore Randall. (Applause.)

I consider it an honor to be asked because of the nature of this industry. I do not suppose there is a thinking or reading man in this country, or the world, that is not immediately interested in this oldest of human industries. The clayworker began before even the worker in wood; lived before the worker in iron; and thousands and thousands of years before steel was discovered. It is a scientific truth that the clayworker began civilization; when the savage built his fire and the heat hardened the earth, clay was discovered. He began to work in it, began to shape utensils, and then make materials for building; the first huts, the most ancient records are of clay. The message you sent to that great man, that noble character, our President, was written precisely as the hieroglyphics of the forgotten past have been written. The records of the earliest times were not on paper or papyrus, but on

clay. They were the first calling cards. In the vernacular of our daily lives, the highest compliment we can pay a man is to say "He is a brick." Who ever heard a man say of a friend, "He is a fine piece of steel," or a lovely piece of hardware, or a piece of wood? But the words "He is a brick" goes in every language all over the world, and as a matter of history that expression grew out of the utility of the product you men turn out in your business.

Now, it is not my province tonight to make a speech, I am not going to try, either. First, prudence prevents me. I think of several things I would like to talk about this very minute, and if I allowed my inclination to follow my desires, I would make an extemporaneous speech, but that is a bad thing.

So, instead of making a speech, I do want to emphasize two or three points. I am profoundly concerned about the economic condition of this Republic. I have never in my life been more concerned about any question. I feel we have entered upon one of the most serious periods of our history, a period that will be a test not only of our institutions, but of the American character. The transportation situation is incredible and something has got to be done about it. Railroad rates have got to come down, and they must come down, or business cannot start up. (Applause.)

Our erratic tax laws have got to be completely overhauled. Invested capital has got to be released. Politicians must cease to care chiefly about the next election, and care mainly for the well being of American business. We need the type of men such as founded this Republic. They had no thought whether they would be victorious or defeated in political contests, but cared only for the well being of the whole people, and the advancement of the power and glory of the nation. The fact is our laws are passed today, and have been for some years, with this attitude: "Of course that is right, but we must not do it, because if we do we will offend the railroad vote," and "The other is right, but we must not do it because we will offend the farmer vote," and "The other is right, but we must not do that or we will lose the business man's vote," and the result is a veritable hodge podge of legislation that we call laws. These things have got to be straightened out. We have got to get down to the bed rock of patriotism and good sense and build up from that. (Applause.) These are merely the topics I wanted to put before you tonight, yet I must not enlarge upon them. It is not my province.

My province is to be a very happy one. It is to introduce to you some very remarkable, some very uncommon speakers who will talk to you on fascinating subjects. The first one appeals to me. The subject of "Hoosierdom." You know we Indiana people are very proud of our State. We are not proud, however, with a foolish pride. We are not vainglorious. Our appreciation of the place where we live is built upon facts. We are proud of the record of our State in industry and in statesmanship and infinitely proud of it in war. You must pardon me if I tell this story—it is a true story.

At the beginning of the late war before conscription was passed, my dear friend, James T. Williams, Junior, the editor of the Boston Transcript, one of the very finest men I ever knew, (he was born in the South like my friend Owsley) could not get into the army because of his lungs, so he went out and made speeches. One day when he was talking to a crowd, he saw a young man in uniform on the edge of the crowd, and he said, "My boy, will you step to the platform?" The young man came rather shamefacedly.

"Will you tell the audience your name?"

"John Smith."

"Where are you from?"

"Evansville, Indiana, sir."

"When did you enlist?"

"The day after Congress declared war, sir."

"Why?"

"My country called me, sir."

He very little expected a repetition of this, but later during another speech, he saw a young man in uniform.

"Will you come to the platform What is your name?"

"Richard Jones, sir."

"Where are you from?"

"Kokomo, Indiana, sir."

"When did you enlist?"

"The day after Congress declared war, sir."

Why did you enlist?"

"My country called me, sir." (Loud applause.)

Now, that is the spirit, and not a vainglorious one, that permeates our State; but we do not boast much about it.

The first speaker has the gift of eloquence. He is a natural orator, a man of whom we are very proud and whom we all love very much. He was a soldier and an officer in the late war. We have made him our Secretary of State. He will now speak to you on the subject of the State of Indiana, and he will speak to you in the spirit of our Indiana poetess, Sarah K. Bolton, who said:

"Though many laud Italy's clime
And call Helvetia's land sublime,
Tell Gallia's praise in prose and rhyme
And worship old Hispania."

Still we Hoosiers feel that

"The winds of heaven never fanned,
The encircling sunlight never spanned
The borders of a fairer land
Than good old Indiana."

Ladies and gentlemen, Major Edward Jackson, Secretary of the State of Indiana. (Applause.)

"HOOSIERDOM."

Edward Jackson, Indianapolis, Ind.

"Such is the Hoosiers' boast, where'er they roam
Their first best country is at home."

Mr. Toastmaster, ladies and gentlemen: I am greatly pleased, indeed, as well as honored, to have this opportunity of being with you on this occasion. I wish I could speak to you as he who has preceded me can speak to an audience such as this on the subject which has been assigned to me. However, before I speak to the subject, as young even as I am, I would like to reminisce just a little bit myself. This is the sort of an audience I have been wanting to address for thirty-four years, just two years after Mr. Randall, your Secretary, had started his labors among the brick manufacturers of the country. I do not know whether our distinguished Toastmaster of this evening had the privilege, among many other varied experiences that he has had, of being at some time in his life a brickmaker. I know it is true from what his friends have said to me, that early in life he had worked at things just as hard as that of making brick, and I know from experience that making brick in the old-fashioned way in Indiana was hard work. Thirty-four years ago I remember having a job making brick in the old style way over in Tipton County, Indiana, when they had to mold by hand. They would mold out six bricks in the mold, and then with a wire cut off the top of the mud, in order that they might have a smooth surface on top, as well as bottom; then it was my duty to carry the mold from the table out where the yard had been smoothed off, I would turn the mold over and deposit the brick on that smooth surface, being careful to raise the mold so I would leave the edges and corners of the green clay in such a condition that it would make as perfect a brick as it was possible for us to make in that way. I worked many a day at that work, and then had an experience of taking part in all of the work that goes into the making of a brick in that way. I have helped to fill the cart with clay for the pit, and then the cart was pulled by an old horse to the pit, and after dumping the clay into the pit, I have helped to carry the water to pour upon that clay, and then—while you young men here may not remember, the older men will, the wheel that tempered the clay, with the old horse hitched to it. I

have followed along and ridden back of the old horse until that wheel would work out from the center to the edge and then back to the center again, tempering that clay until it would be in such a condition that it could be shoveled into the wheel barrows and wheeled up the incline to the table where the brick molder was waiting to mold it into brick. I have wheeled it to him, and then I have had, as I said, the privilege of off-bearing the brick. I am glad, as we learned from his message to this convention that the President of the United States had a like experience and privilege of being a brickmaker in his boyhood days.

Not only have I had the pleasure, however, of participating with some of you in making brick in the old-fashioned way, but a few years later in life after ambition had gathered within me until I could give it voice in expression, I had moved from Tipton County over to Henry County, Indiana, and there I exercised as much courage I am sure, as our dear friend exercised which he spoke of a while ago, when at a little cross roads town I hung out a shingle indicating to the world, or to as many of the population of the State of Indiana as would see it, that I was an attorney-at-law. Before I hung out my shingle, however, I made arrangements with the doctor of the village that I was to occupy one corner of the front room of this doctor's office, and for that privilege I was to pay the price of seventy-five cents per month. (Laughter.) Then after I had made that arrangement, clients were so slow in coming to me to engage me to look after their business for which they could pay me a fee, I was obliged to go into the brick factory and off-bear brick from a machine to earn the money to pay the rent.

Friends, I have been assigned the subject of Hoosierdom—Indiana. I am proud of the great state of Indiana. I am proud of it because I am a native son of the state, because on my father's side I am the second generation of Hoosier born, and on my mother's side, the third. Not many of you are living within the bounds of Indiana, old Hoosierdom, and can boast of her and the pride we have in her, as our Toastmaster. Many have come to the state and have adopted it as their state, but that reminds me, however, when we speak of the pride we have for our state, whether we are native of the state, or whether we have come by choice, the latter are often more proud of the state of Indiana than those who have been permitted to be born within the boundary of the grand old state of Indiana.

It reminds me of a story of two boys having an argument when one boy said, "I have got the grandest parents in the world, and they think all the world of me. Oh, how they love me," and the other boy said, "Yes, but I have grander parents than you have, and they love me better than your parents love you." The first boy said, "How's that?" The last boy said, "You are the real son of your parents, and they of course had to take you, but I am the adopted son of my parents, and they had the right to choose me and that's the reason why my parents think more of me than your parents think of you." So I say those who come from other states of the great United States have come to Indiana to make it their home as their adopted state, are as proud of Indiana as are the native sons of the state of Indiana.

My friends, it is a great state, it is a wonderful state in which to live. God has blessed us in Indiana. There is a poem, I don't know whether Bill Herschell is going to recite it or not, "Ain't God Good to Indiana." You have heard it and it has rejoiced your soul, because you can apply it to the state in which you live, as well as to the state of Indiana. If you go to the northern part of Indiana, there in that industrial region of Indiana and see there the miles of those smoke stacks from the industries there established which are not equalled by any other locality scarcely in the world; and when you travel through the central portion of Indiana and see the broad acres of fertile soil which produces the various products of the soil of Indiana; then when you know of the great quantities of fuel placed by the hand of God in the bowels of the earth, a bountiful source for man to get and use for his comfort and the comfort of his family, and to send out to the world to comfort others, as well as those in Indiana. Then when you go to the southern part of this

great state of Indiana and there see the beauty of Indiana, that God has placed there for man to stand and look at and see that beautiful scenery for man to enjoy, we are caused to exclaim, "Great is Indiana, wonderful is the Hoosier state."

But, my friends, as great as these things are, as wonderful as they seem to be, as charming as they are to the eye and senses of man and women, after all that is not the great possessions that Indiana boasts of. My friends, she boasts today more of her citizenship than she does of her material wealth. (Applause.) She boasts more of her sons and daughters who are coming upon the stage of action to solve the problems of the future and to enter into the elevating of the communities, and take their places on the stage to do their part in the world. We are proud of Indiana and of her material wealth, of her citizenship, and her boys and girls, but after all the great thing Indiana has to offer is the ideals that the American citizens have in this center of population of the United States. I said the other day that Indiana was the center of population in the United States, and she is the center of the patriotism of the entire world. (Applause.)

My friends, great indeed is Indiana, proud as we are of her, those of you who have come from other states are just as proud of that state, and the duties and obligations of life rests just as seriously upon you as it does upon the citizenship of the state of Indiana, and after you have completed your labors here and have gone back to your homes, those of you who live in other states, I hope you will return to your homes with a renewed purpose and determination of taking up the burdens of life there as you have laid them down for a time to come here. I trust you may have gotten a renewed inspiration that you will feel the obligations and duties that are yours shall not be ignored, and that every man shall indeed accept that obligation, whether he be native Hoosier, adopted Hoosier, or citizen of another of the fair states of America.

I believe in conclusion, I can bring to you the yearning of the heart of the average man or woman as they trudge along life's pathway, as they undertake to look into the future and up the path of the future to solve the problems that lay before them and perform their part of the work of the world as best they can. I can bring to you the yearning of the heart of the average man and woman of America, in the words of the poet when he said,

I'd like to think when life is done
That I had filled a needed post,
That here and there I'd paid my fare
With more than idle talk and boast,
That I have taken gifts divine
The breath of life and manhood fine,
And tried to use them now and then
In service for my fellowmen.

I'd hate to think when life is through,
That I had lived my round of years
A useless kind that leaves behind no record
In this vale of tears.
That I had wasted all my days
In treading only selfish ways;
And that this world would be the same
If it had never known my name.

I'd like to think that here and there
When I am gone there shall remain
A happier spot that might have not
Existed had I toiled for gain,
That someone's cheery voice and smile
Shall prove that I had been worth while
That I had paid with something fine
My debt to God for life divine.

(Applause.)

Toastmaster Beveridge: Ladies and gentlemen, after listening to our Secretary of State, you see readily why it is that the Indiana politician is a world beater. I have known Ed for many years; I knew he was a farmer boy, a railroad laborer, worked in a lumber camp, was a blacksmith and a

carpenter, and a clerk in a store, but I never knew until tonight that he was a master brickmaker (Laughter) of olden times. As he recited that touching experience, I felt he made the Jews who were required to make brick without straw look like pikers (Laughter), but I don't intend he shall leave me entirely behind. I never made any brick, but I hauled them—so you can include me in the list of other great men. We are modest people, we admit it ourselves. (Laughter.)

We come now to a more local source of our pride. This town where we live has been acknowledged, "No mean city." A long time ago, I made up my mind that the proper name for Indianapolis was "The City of Homes." We have a better distribution of wealth here than any place else in the world. We are very proud of the town and everything about it. We are chiefly proud of the fact that sometimes we are able to entertain men and women from other places and other cities and to appreciate their appreciation of the places from which they come. (Applause.)

Now the toast of "Our City" is to be responded to by our



Mayor S. L. Shank.

mayor. I have a fellow feeling for him, something of envy too, because he is the only other man in captivity who in his political career, ever got more brick bats than I did. (Laughter.) It seems to me strange that—both of us perfectly harmless men—whenever we run up against anybody in politics, (I am not in politics, he is) we were confronted with a keen sort of—I am reminded of a story a bright woman related at the Sons of Veterans' banquet I attended recently. A negro gentleman went into a shop to buy a razor. They showed him a safety razor of a certain make, "I don't want that kind of a razor." They showed him another make. "No, I don't want that kind." They showed him still another make, and the negro began to get annoyed. "I don't want that razor for shavin', I want it for social purposes." (Laughter and applause.)

Mr. Shank has gone through a wonderful campaign, probably some of you have heard of it. It was wonderful in this respect, that he was elected by the greatest majority ever

given to a candidate for mayor since Indiana was admitted to the union. Everybody just seemed to go out and vote for him; and now he has on his hands a very difficult task, a very noble work of giving an administration to Indianapolis for the next four years. And he has the hearty good wishes and earnest support of every citizen of this municipality, men and women, that his administration will be successful. Nobody except God fails to make mistakes; but of one thing I am sure, if Mr. Shank makes a mistake, it will not be one of the heart.

There is a treat in store for you. It was never my privilege to hear Mr. Shank until the other night at that banquet of the Sons of Veterans, and it was a very notable banquet. I do not know how many friends he had there before he rose to speak, but I know this—when he closed every man and woman in that audience was his well wisher and friend. Wit of the genuine sort, real humor, no self-consciousness, a touch of human sympathy, and we may say of homely wisdom. Ladies and gentlemen, it is with great pleasure I have the privilege of presenting to you Mayor Samuel Lewis Shank of Indianapolis, who will speak to you on "Our City." (Applause.)

"NO MEAN CITY."

Honorable Samuel Lewis Shank, Indianapolis, Ind.

"Sir, you are very welcome to our house."

"If you don't see what you want, ask for it."

Mr. Toastmaster, Ladies and Gentlemen:

I want to say to you one of the hardest things we have to do in Indianapolis is to measure up to the standpoint of the men who introduce us. I have had that for the last ten or fifteen years and I have been running ever since, Bryan and I started at the same time. I am glad to be here, it is always a pleasure to come before a fine delegation of men and women visiting in Indianapolis. In Indianapolis there is not any one ten years old who has not heard me talk. I can't find any one here in Indianapolis that hasn't heard me. I don't know what to say to you about No Mean City, but I want to say I have traveled all over the United States and I have always looked back and thanked my good old mother and father that they had me born here in Indianapolis. I love my mother and father for that privilege, because I have never visited any city that I thought was any better than Indianapolis.

I wondered what Ed Jackson was going to say about the Southern part of Indiana, and of course it took me back to the time it took me four hours to drive four miles—you had time to see the beautiful scenery—Ed, you pictured it all right, but I could not see the beauty of that long road I traveled on my way to Kentucky.

I am going to touch a little on Indiana. We have some of the greatest cattle that was ever raised. Our Governor was in the cattle business. We elected him Governor of the State of Indiana—these goats and other animals did. (Laughter.) I doubt very seriously if he would be Governor of Indiana today if it had not been for that. He sold one of the animals for \$100,000 or more. We have some of the most wonderful hogs. Our Mayor a few years ago paid \$1,500 for one of these hogs—they skinned him, but they did not care. (Laughter.)

I want to say to you we have some of the greatest brick manufacturers, because I built a little chimney the other day out at my house, and the bill was \$175.00. I have never had any experience putting brick anywhere else, but they must be great brick here in Indiana. I never made any, like Ed Jackson, but I have pressed a lot of them, but that is the nearest I ever got to it. They must be dandies we have here in Indiana.

We have had great men here in Indiana. There was Morton, the great war Governor, Benjamin Harrison, President of the United States, Fairbanks, almost President—the other fellow did not retire during the four years, so he never arrived at the presidency. We have got Billy Sunday, and I think he is one of the greatest characters that ever lived. I never expressed my own opinion about any man until I have heard him—I never criticized Wilson—since I heard my friend, Tom

Marshall, make a speech in Boston in which he said he never criticized any man until he heard him. I had never criticized Sunday because I never had the privilege of seeing him. Billy Sunday and I were on the same bill. My wife and I had the privilege of going out to hear him. There were some eight or ten thousand people in that tent. We could hardly get in for the crowd, and when we finally got inside you could hear a pin drop to hear Billy Sunday. The Indianapolis News, one of the greatest newspapers in the United States, I take off my hat to them, but I gave them an awful licking last fall—they made remarks about me taking off my coat and taking off my collar, but Billy Sunday took off his coat and stood on the pulpit, and if I should use the language he used, some of you women would walk out. He lives right here in Indiana, up at Winona, where there is one of the biggest Bible schools in the world. One of the reporters saw me down there in West Virginia and he said, "Lew, what do you think of Billy Sunday?" I said it in about four words, and the next morning I picked up the paper and "What Lew Shank Says About Billy Sunday," and there was two whole columns and a half, it was wonderful; I never knew I knew so much about Billy Sunday, and of course Billy Sunday liked it, and of course he brought a big delegation over to see me. He met Mrs. Shank and said, "Tell your husband to come and see me," and just then I came in, and he took me by the hand, he is a little man, something like my friend Beveridge, and he said, "God bless you, Shank, what do you think of me?" and I said, "Personally, I think you have Barnum and Bailey backed off the boards. I saw them passing the boxes down there and they were getting dimes and nickels." He said, "Listen, I am as good a collector as ever. They will have to come on with the dollars." I said, "You can stay ten weeks in a town like this, and a circus can only stay one night." (Laughter.)

We also had James Whitcomb Riley here, the greatest poet, the greatest man of them all. We also have Bill Herschell here. The brick men have the cream of Indianapolis in oratory. I don't know how you ever got such a delegation of big men—it is seldom we ever meet on the same bill. Booth Tarkington, the author, of whom Mr. Beveridge spoke a while ago, lives here. He is second to none. I campaigned with him one year. I was passing out two for a nickel cigars, the old-fashioned kind. Booth wanted to be a politician. I said, "Come with me, I will teach you. Get a pocketful or two of cigars," so he stopped at the University Club and bought two for a quarter, little black ones. We went out into the country. I would say, "Have a cigar?" and they would take one or two. Booth would say, "Take one of mine." He finally got to saying, "I am running for a little office," and calling them all "My friend." We came back to town and went again to the University Club, and in those days it was wet, and we sat around the table and drank until the glasses had to be turned down. Booth wrote a story about the great campaign he went through, but he was successful and made a creditable and fine member of the Legislature. I wish we had more like him today to go into the Legislature. He is a wonderful character, he has a heart of gold and a manner that would make you all feel you were greater than he. If he took a man with overalls into his home, he would make him feel he was a big man. Too many think they are so much above the under fellow.

We had Thomas A. Hendricks, a Democrat, but a wonderful man when he was a United States Senator. We have Tom Taggart. Of course, you who have not met Tom, you will. You can go from Indianapolis to his place, a wonderful road all the way from here to French Lick. I do not know what is down there just now. When I was Mayor before, the preachers got me up here at the First Baptist Church and the Governor was there, and the ministers were going to jump on me about the conditions here in Indianapolis. When I was going into the church, one of my friends said, "They are going to burn you up." I said, "I want to be at the burning. Who have they got up there?" My friend said "Governor Hanley." I saw they had Samuel Lewis Shank way down on the program, and I said, "Brother Taylor, can you let me speak before the Governor?" Of course, he let me, and I got up and I

said: "I know I am here to be condemned for the wide open saloons and for crapshooting up on Indiana avenue—(where our 45,000 colored population congregate). I have only been Mayor four months, Governor Hanley had been Governor four years and there were those places down at French Lick, and there was a little wheel with a white ball running around—I think it was roulette, it was running the first year and it is still running, and I was down there last week and the little white ball is still running around on that table. It is my candid opinion if our good Governor cannot stop one little ball down in French Lick in four years, he cannot expect me to close all these saloons in four months." Do you know, Governor Hanley never said one word about me in his speech.

I went down to Louisville the other day, and some of the boys were getting a shave, and I was getting a shine. A little colored boy was doing the job, and I said, "How's crap shooting down here?" He said, "Lord, mister, we caint shoot no craps down in Louisville no more. The mayor won't let us." I said, "Where do you shoot 'em?" He says, "We goes up to Indianapolis. I was up there last Sunday." (Laughter and applause.)

I am going to tell you another little story and I am not going to detain you very long. When I was elected Mayor before, the Indiana Society in New York invited my wife and me to come down and make the annual address to the Indiana delegation. So I got a new diamond ring, a dandy, and my wife got a new hat, and we started out. We got down there and they met us at the depot and took us to the Astor. After we got there, my wife and I, she is known here as Sarah, probably you have heard of "me and Sarah"—the News said she was all right—she is a hard shell Baptist and a Democrat, and I am a Methodist and a Republican, so we got both sides. After the dinner, we went up to our rooms, they were being paid for and we had three. One was a large big parlor, and finally we went into the next room, and there was a fine bath room, and when we got ready to retire, I said, "Come here and look in here." There was a couple of those devilish twin beds. We had been married about ten years and had always found one bed big enough. There were a lot of buttons, and I reached over and touched a button and up came ice water, and it cost me a quarter. But I finally pushed the button and got the light out and got to bed and my wife began to sneeze, and she said, "Lew, there is a draft in here," and I got up and looked at the windows and they were all closed, and I got back into bed and it kept getting colder and colder, and finally we both got into one of those devilish twin beds, and when we woke up in the morning I found I had shoved one of those buttons and started one of the fans, a big ceiling fan. (Laughter.)

I want to tell you one little experience we had on that trip. Since then we have traveled a great deal. A banker who met us at the dinner said, "I want you to come out to our community center on Friday night. Come over and take dinner with us." He gave me his card, down on Wall street. I said to my wife, "We don't eat today, we will have another banquet tonight when we go to the banker's. At five o'clock the cab came after us and whirled us over to Long Island. We went up to the door and I pushed the door bell, and one of those fellows with long-tailed coat said, "Card, please." I said, "I never carried a card in my life. Tell them Mr. Shank and his wife are here." He showed us into a room, in one corner there was a woman on a pedestal—we would not be allowed to have it in Indianapolis. He hair was down her back—I sat down on the divan and looked at it, and finally the man came down in a business suit, and he was a dandy fellow, and pretty soon I looked at the marble stairway, as fine a stairway as I ever saw, and at the top of that stairway—boys, I have seen queens, you understand, but not live ones—this woman put you in mind of one. A wonderful woman, beautiful, tall and stately, she came marching down with a long train dress, those days they wore them longer, and you could tell how old they were. The man got up and said, "My wife, Mr. and Mrs. Shank," and her hand was way up in the air. I went up and got it. Finally they said, "We will have lunch." They pushed a button and in walked another fellow with a little cart with dinner for four. I could have eaten everything

on that table. The coffee cups were these little three finger cups. You know, ladies and gentlemen, after we had gone over to the community house and had our speeches and got through the meeting and gone back to that wonderful house and sat down with that man and that woman, we found they were just a man and woman, like we were. Afterward we got a card which said, "Your presence is requested at the wedding of our daughter." I don't know what kind of presence they got, but we sent ours. I found that wonderful banker and his wife were just a man and woman, a fine man and woman, with hearts like yours and mine.

Since I was elected Mayor this last time, I got a letter which said: "From your description in the Indianapolis News, I thought you had horns, but since I know you I have found you are just an ordinary everyday gentleman." We can't all be alike. I paid \$60.00 for a wonderful dress suit coat. There are other fellows who can wear them, but I can't. I am just an ordinary man trying to live right and do right. I have been trying to live for the last three weeks just as I am the next four years. They tell me I will back out before I get there. I don't know.

All I can offer you is just genuinely what is in my heart, because no man can have or know more than our Jesus Christ gave him the brains to know. Whenever I meet a fellow that don't know as much as I do, I am sorry. When I meet a fellow with more brains than I have, I am glad, because I am afraid the country would have been lost if no one had any more than I have.

Now in all seriousness, just one thing more. We have tonight in our presence one of the greatest characters, one of the greatest men, one of the leaders in every respect, one of the greatest statesmen the United States has ever had or ever will have, Albert J. Beveridge. That is my candid opinion. (Applause.)

Toastmaster Beveridge: You see, ladies and gentlemen, we do not intend you shall forget us, and our dearest hope is you will remember us with kindest thoughts. You also see why it is that the more Mayor Shank was talked about, the stronger people were for him. I think two things are responsible a little bit for it: everybody freely concedes his absolute honesty on one hand, and on the other hand his great tenacity and humanity. I thought he was going to tell a story he told at that Sons of Veterans banquet. He went along telling what he had done as mayor. He said, "I guess I made more men and women happy or miserable, as the case may be, during the time I was mayor than anybody who ever filled that office. You know I married a lot of people." One night a couple came out to his house for him to marry them. After he had performed the ceremony, the man said, "What do I owe you." Lew said, "I told him I did not charge him anything, they usually gave me what they thought the bride was worth. He gave me a dime, I looked at the bride and gave him back five cents." (Laughter.)

I am rather touched by the opportunity of presenting the next speaker, not only on account of the subject on which he is to speak, but on account of the man himself. His subject, "Our Unfinished War," is probably the most important thing before the American people, greater and more difficult than all our business problems, as complex as they are. We are a curious people, not like any people of the world. The people of Italy are Italians; of France, French; Spain, Spaniards; England, English. They all come to America and bring all creeds with them. Up to the time of the Civil War, we were nearly all British descent. Then came other races, other nationalities. Our task is so great that men and women see in it the hand of God which is to weld all these groups into one great harmonious, homogeneous people, not only one in language, one in ideals, but also one in blood. Our task is no less than that, to create a new race on this old earth, and if we don't succeed, then this last experiment of human liberty will fail. It is very well illustrated by a perfectly true incident which occurred during the late war which brings the subject of the next speaker to your minds.

A top sergeant was calling the roll of his company, and when each private answered "here" he checked. It went about like this:

"Doubec," "Here," "Check."

"Slovec," "Here," "Check."

"Podowski," "Here," "Check."

"Picolo," "Here," "Check."

"Schwartzel," "Here," "Check."

"Flannigan," "Here," "Thank God for that good American name." (Laughter and applause.)

Now, the task that is before us is to take these people who really want to be genuine Americans and help them get their bearings; our great task is to mold them into American citizens, and point out to them what our great institutions really are, and describe to them so they can clearly understand the basic features of our Constitution—that great ordinance which makes our liberty permanent and sacred. When that is done we shall have realized the America that our forefathers founded here and loved. There is no man in America better fitted to speak on that mighty theme than the next speaker. I personally believe in love at first sight. On my part at least that occurred when I met Colonel Owsley. He was born in Texas, and never in my life have I seen a better type in appearance and in spirit than this splendid young American, this glorious soldier. He fought to uphold the flag; he fought for what our fathers fought for, fought for the flag. I am really touched to have the privilege and the opportunity of presenting to you to talk on the great subject, "America's Unfinished War," Colonel Alvin M. Owsley, of the American Legion. (Applause.)

AMERICA'S UNFINISHED WAR.

Colonel Alvin M. Owsley, Indianapolis.

"The days of peace and slumberous calm have fled."

Our Distinguished Toastmaster, Ladies and Gentlemen, My Fellow Americans:

Of course I am very much moved, and I am profoundly grateful for the message that such a distinguished American has uttered in introducing an humble American citizen, because that is all I lay claim to be. You and I are friends together—and this is a splendid introduction to this great State of Indiana. As I listened to the distinguished Secretary of State, and the no less distinguished Mayor of the patriotic City of Indianapolis, I was reminded of a Jew friend of mine who was very closely connected with the very distinguished jurist and lawyer, Mr. Choate, in his balmy days. Mr. Choate had more than he could do and he called in my friend and asked him to take charge of a case for him. It was a very difficult matter but it was soon done, and Isaac brought it back and said, "Mr. Choate, I have finished, how much will my fee be?" "How much do you think it ought to be?" said Mr. Choate. He said, "Surely a thousand dollars." Mr. Choate said, "Very well, I will take care of that when you come tomorrow at two o'clock." He was there promptly at the time, and Mr. Choate handed him a check for \$5,000. The Jew looked at the check, and said, "Mr. Choate, do you mean to tell me, this is my part of this fee?" "Yes, that is right." "Well, Mr. Choate," said Isaacs, "almost thou persuadest me to be a Christian." (Applause.)

I yield to no true American in my love for my Southland, but having heard the story, both in song and poetry, of this great State of Indiana, I am beginning to love her with a true love. But you and I are gathered from many states that make up this great union of ours. Let us rejoice, my countrymen and women, that out of a common faith, with a common blood and with a common sacrifice, we are fast being molded into a common bond of union, and we are being marshalled under one flag and in one name—that name is America. (Applause.)

More than that if I mistake not, we feel that touch of the spirit that the men must have possessed who went forth with the crusaders in the world's great war. Theirs was the spirit that meets a challenge, a spirit that wants to help, and if you will combine these two qualities you will have the essence of Americanism which is typified to my mind in that great Washington monument, that clean straight arm raised up to Heaven in eternal pledge, sir, that our land shall always be independent and free. (Applause.)

I stand here conscious of the fact that there are more men here from the North than from my own Southland. All of the men before me in my own household fought in the Southern army. Their blood was shed in defense of what they believed to be the great cause of right. But in this presence tonight, I believe I can truthfully declare that no well informed man or woman of the South or of the North would have had that great conflict terminate in any other way than for the safety and preservation of this great union of ours. (Applause.)

In recent years a great number of distinguished Americans have been devoting their attention to the problems of the Americanization of the millions of foreigners that during the last half century have come to our shores, and they have found some strange things and some things full of surprise. They have found there are millions of men, women and children in this enlightened land of ours who cannot speak, more still cannot read or write the English language. And more than that, because of the illiteracy of our people we are about to lose the place of pre-eminence as the foremost people of a civilized race of men. They are telling you that ignorance is our most formidable enemy. Education there-



Colonel Alvin M. Owsley.

fore is our friendly ally. This America that has done so much for others, this America must save herself, and she can never be safe until she vitally interests herself in the education of her people in the high privileges of noble useful citizenship.

Our forefathers had their problems for solution and we have ours. Ours are as much more grave than theirs as our civilization is more complex and complicated. They fought and strove to give us liberty. We fought to maintain that liberty. To regain what we had lost. We must now fight to win educational and industrial liberty in this land of ours, and the thought behind educational and industrial liberty means that there be uppermost and foremost in our hearts and minds, that the sacredness of human life must first come, and the sanctity of the property rights must then be restored to insure the permanence of our Republic. (Applause.) Why should we have Flag Day in our schools? Why should the teacher of your children point to the flag of our country and the stars that are hung in it, as a symbol of human liberty, without telling these children of the tremendous law that put each star there and keeps it there. I would

fight as quickly for every line in the Constitution of the United States as I would fight for every star in our flag. Why? Because I believe I have the knowledge of what the Constitution and the Flag mean. The Flag and Constitution will live and die together. (Applause.)

Among the first great truths so commonly recognized among free men was written that "Governments derive their just powers from the consent of the governed." Our country can be no better than our people. I tell you that citizenship is not a question of birth. It is not a question of naturalization, it is a question of faith, of uncompromising devotion to the laws of this land, and a willingness to fight and work, and if need be to die for them. I say to you that the man or woman who would destroy the American government is not a loyal American. (Applause.) I say to you that the man who does not believe in our democratic republican form of government cannot claim the glory of American citizenship. The time has not yet come when men or women can prostitute American ideals and still be called and known as Americans. (Applause.)

My thoughts turn backward to those hands that once upheld the banner of liberty that are now motionless forever. Those eloquent lips that once sustained it are now hushed, but the spirit that maintained, resolved and understood which to men like these made it life to live, shall never die.

"They shall defy the empire of decay,

When time is o'er and worlds have passed away.

Cold in the dust, the perished heart shall lie,

But that which warmed it once can never die."

Let us gather inspiration as we follow the onward march of our flag, and let us make sure that we shall hand down to the generations that are to come our republican institutions in all their purity and integrity. Let patriotism be our immortal principle, love of country our very life, and love of country and love of liberty are one. Let there sink deeply into our hearts the sentiment expressed to the world by those lines engraved upon the tomb of the Southern soldier:

"Who saves his country, saves all things,

And all things saved will bless him;

Who lets his country die, lets all things die,

And all things dying will curse him."

I feel, my countrymen and women, that you do me honor tonight because I come the representative of nearly one million of the country's defenders, who have bound themselves together in the everlasting bonds of comradeship, the American Legion. We have pledged ourselves as the Nation's defenders. We will make good that pledge even at the cost of our lives and our fortunes. Remembering the admonition of that great American, Washington, we have raised a standard to which the wise and honest can repair, "the event is in the hands of God." The men who compose the American Legion, are the soldiers, sailors and the marines; those who went overseas, who were on the seas, and those who were waiting in training camps for the call which, happily, did not come. These men are now and must continue to be the dominating factor in this Nation's life. Why not? Having saved the Nation, haven't they the right to help it on in safety and security? They will tolerate no disorder. Through their service for their country they have learned that discipline is essential to organized society. While we do not believe in any form of militarism, still we do believe in physical development as against softness; in the educational development as against ignorance; in work as against idleness; in thrift as against waste. They will put their muscles, their brains, their souls into the making of the happiness and prosperity of the American people. Yea, the welfare and love of country that possessed them in the stormy days of war, is the ruling passion of their lives in times of peace. They were relying on that promise given in Holy Writ, "Have I not commanded you, be strong," "Be not dismayed, the Lord thy God will be with thee, whithersoever thou goest." No enemy can stand before thee. "I will not fail nor forsake thee." Thus commanded and thus commissioned, more than

2,000,000 of America's sons went more than 3,000 miles across the perilous seas, to save the civilization of the world. The Lord our God was with them. He did not fail them nor forsake them, no enemy was able to stand before them. The liberty of the world was saved, freedom again enthroned and our flag floats in triumph and glory from every flagstaff in this Republic, teaching men the power of truth and proclaiming to the Nations their Redeemer liveth.

I trust in God that the struggles of the future will be struggles of peace and not of war. But remember a Nation that forgets its defenders will some day cry aloud and they will not come. A nation without heroes is a nation without a history, and a nation without a history is a nation without patriotism and must die. A nation that remembers her heroic defenders and rejoices in the kindred of their blood will always produce heroes. As long as America provides for her matchless defenders and treasures their accomplishments—yes, glorifies their names, so long will America remain the shrine of patriotism and the citadel of liberty.

In our land today many tongues are being spoken. I declare in the name of a million men tonight there is room for but one language in America. We shall so harness the tongues of all our peoples and teach them to know and understand and love America that if the supreme test should ever come again, they—yes all—will come marching like the army of the Lord, speaking a common language and say:

"America, my country, I come at thy call,

I plight thee my troth, I give thee my all.

In peace or in war, I am wed to thy weal,

I will carry thy flag through the fire and the steel.

Unsullied it floats o'er a peace loving race,

On the seas, nor on the land shall it e'er suffer disgrace.

In reverence I kneel at sweet liberty's shrine,

America, my country, command me, I am thine!"

(Prolonged applause.)

Toastmaster, Beveridge: Ladies and gentlemen, I am sure that it is now clear to you all why I spoke with such feeling and seeming extravagance when I introduced the last speaker. Two or three days ago I had a letter from one of the great scholars of America, a man for whom I have a mingled feeling of affection and reverence and admiration that I do not have for any one else. He said to me, "The only people in the east who are talking about institutions are the radicals. How is it with you?" And as I listened to these words of Colonel Owsley, I wished that great scholar could have heard that great speech, so rich in reverence, so noble in patriotism. As I listened, these lines of Joseph Rodman Drake came to me.

"Flag of the free heart's hope and home,

By angel hands to valor given!

Thy stars have lit the welkin dome,

And all thy hues were born in heaven!

Forever float that standard sheet!

Where breathes the foe but falls before us?

With Freedom's soil beneath our feet,

And Freedom's banner streaming o'er us."

(Applause.)

Now just to show you we have a preacher here in Indianapolis we are going to produce a speaker of an entirely different type. He is a preacher whom everybody in this town loves, no matter whether they belong to his denomination or not, or whether they go to church or not; and because of that everybody is proud of the fact that he lives in this town. I am not overstating at all when I say the outstanding characteristic of Frank Wicks is his affection for the human kind, and when Abou Ben Adhem's dream comes true, and the angel writes the record of those who love their fellow man, Frank Wick's name, so far as we here in Indianapolis are concerned, will lead all the rest. And to show the catholicity of the preachers here in Indianapolis, you will find when he gets up, he wears a flaming red neck tie and a business suit. I was not the least surprised when the sleight of hand man came in here and found Frank Wicks shuffling a deck of cards as though he were an expert. He is going to talk to us on

"The Home Builder" and there is no man here in Indianapolis or Indiana, or in America, better qualified to talk upon that fundamental subject than the Reverend Frank S. C. Wicks. (Applause.)

Secretary Randall: Frank sits in the audience with his friend Bob Elliott and family by preference, but we want him to come up here where every one can see him.

Toastmaster Beveridge: You would never take Frank for a preacher to look at him, but he is.

"THE HOME BUILDER."

Reverend Frank S. C. Wicks, Indianapolis, Ind.

"Build sure in the beginnin'

An' then don't never tech the underpinnin'."

Mr. Toastmaster, ladies and gentlemen: I will explain why it is I took that modest place. You will observe the other speakers have been fixed in the bright light to display before you their purple and fine linen, while being only a mere preacher who has no eloquent discourse upon some economic or political theme, he is telling the people what a fine piece of literature the Bible is. I supposed of course he would quote these words of the Master: "When thou art bidden to a feast, you will be exalted." Then, "He who exalteth himself is abased, but he who abaseth himself, is exalted," and verily among you have the Scriptures been fulfilled, in that I am exalted in your midst.

The other day I met Strickland Gilliland upon the street, and he said, "Wicks, I have one on you," and I said, "Fire away." "The other day," said he, "I was invited to an evening party and the hostess said 'I had hoped Frank Wicks would be here this evening, but he writes me he has lost his voice and cannot come, and upon that Mrs. Smith innocently observed: 'Couldn't the dear man come and just listen?'" I thought tonight I was coming to just listen, but just before I entered this room, you can imagine my joy and delight when for the first time I knew I was to be one of the speakers. One of the joys of being a speaker is that you are living above the sordid joys of the palate, you cannot tell the difference between the soup, the roast, the chicken or the salad, and you hear mighty little of the speeches except your own. I came here disguised as a business man; I hoped I might be taken for a prosperous brickmaker, but I have been unmasked and you know I wear the clerical robes.

The reason I have been introduced is this: Teddy Randall wanted you to know he knew at least one preacher in Indianapolis. (Laughter.) Some ten years ago he came to my church, he tells me he has not been to church since, that sermon was so good he has never needed a second one. (Laughter.) It so happened that morning my subject was "Turning water into wine." After the sermon, Teddy said, "Wicks, if you will work that miracle, I will furnish the water." (Laughter and applause.)

I wish I might pose as being born in the State of Indiana. I came through choice. This spring I had great difficulty in proving I had been born anywhere. It took me three months to prove I had been born in Massachusetts. I did not have the difficulty my friend Will Cressy had. He went to war for the purpose of entertaining the boys. They demanded his certificate. He wrote to the little town in Vermont where he had been born to secure the records, but the records had been burned. Then he was told he would get a transport if he could produce eye witnesses. His parents being dead, he put an advertisement in the Vermont paper, and he found twelve people who were willing to swear they had seen him born, and he concluded he had either been born in the town hall or in the fair grounds. (Laughter.)

I wish I could pose I had one time been a horny handed son of toil, that I, too, have been in the manufacture of brick, but I fear I have never done an honest day's work in my life. No matter. I am in receipt of a princely salary, a large part of which comes from Robert Elliott of the Standard Dry Kiln Company, and when people ask why my sermons are so dry, I tell them it is because it comes from the dry kiln, and no piece of pottery or ware that comes from that kiln can be anything but dry.

I sat and said, "I will show them what an extemporaneous

speech is," and that speech was murdered in its infancy, because the Toastmaster defined an extemporaneous speaker as one who said nothing and takes a long time saying it, and so the long speech I brought together to give you on the Home Builder will not be given you, but I am sure it will find a place in the columns of The Clay-Worker and you may read it in your homes in the future.

I asked a man in a vaudeville performance, who comes out and does something or other, what he was doing and he said, "Oh, I am doing this while they arrange for the next act," and while I am talking, Bill is changing his costume, and the curtain will go up and there you will see Bill Herschell in all the glory of the poet, on whom has descended the mantle of our beloved Riley. (Applause.)

Toastmaster Beveridge: Ladies and gentlemen, we reach the climax now. I was particularly glad of that Scotch song a while ago because it enables me to introduce to you a person of Scotch blood, as I am myself. A friend of mine says the difference between the Scotchman and the Englishman is that when an Englishman leaves a train he looks around to see if he has left anything, while the Scotchman looks around to see if anyone else has left anything. So keep your eye on us. We have heard from the minister and the politician and the soldier, all eloquent men, and now we are going to show you the poet, a fellow whose fame has spread over the land. I was out in Iowa a few months ago. About half an hour



Rev. Frank S. C. Wicks.

after I got to the hotel, I was called to the telephone, a lady on the phone—and this is a true story. She said "Is this Senator Beveridge?" I said, "It is." She said, "I used to know you when you were a young man." That floored me, but I said, "Yes." "I have followed your career," said the lady, "and I have read all your beautiful poems." "Haven't you made a little mistake? I don't happen to have ever written any poetry." "I have made a mistake," she said. "It is Bill Herschell who wrote those poems." (Laughter.) We are going to have the very great pleasure of listening to this gifted Hoosier, who we think is a second Riley, and of whom we are all so proud, and for whom all of us have such a genuine affection, Mr. William Herschell, or as we know him, "Bill" Herschell. (Applause.)

THE SCRIBBLER

William Herschell, Indianapolis, Ind.

"The jokiest, wittiest, story-tellin', song singin',
Laughin'est, jolliest feller you ever saw."

Mr. Toastmaster, ladies and gentlemen:

Filling as I do the caboose end of this program, I will be brief. I am going to inflict on you a few of my verses. That is what Teddy Randall wanted me on this program for, to ride Pegasus, the ancient steed of poetry. I am almost in the plight of the Second Lieutenant, except that my Pegasus is a small horse. A very little Second Lieutenant was sent out to drill a platoon of robust rough necks. As he stood out in

front of that massive platoon, some voice in the line piped, "And a little child shall lead them." The second Lieutenant looked aggrieved and said, "The man who said that will step three paces forward." An hour later an order came for that platoon to get ready for a twenty mile hike, equipped in heavy marching order. At the bottom, the order said, "And a little child shall lead them on a damn big horse!" (Laughter.)

I am Indiana's champion 215-pound poet. Of course there are some smaller ones. There was one last Christmas. You know here in Indiana, poetry just happens. Jap Jones, a very bright chap down at Martinsville, sent me a dozen eggs for a Christmas gift, and eggs were sixty cents a dozen. Each egg was beautifully wrapped in holly paper. I knew there must be a message to indicate from whom the gift came. Finally down at the bottom, on a piece of grocer's paper I found this poetic outburst:

"May this dozen eggs remind you,
As you pen your thoughts on the hearts of men
That yours is a God given duty,
But this is a pleasure for the hen." (Laughter.)

My friends in Indianapolis, like Mr. Randall and Senator Beveridge, and Frank Wicks, the red tie preacher, sometimes say nice things to me and I go home and tell it. But Mrs. Herschell doesn't like the idea of my becoming at all enlarged in the cranium. Not long ago I had written some little thing, and she was called on the phone by a friend who said, "When they say these nice things to Bill, does his head swell?" "Yes, of course it does, he comes home and tells me the nice things they say. You should see him now swelling up and feeling good." "What do you do when he gets that way?" "Well, just about the time Bill gets to feeling his best, and I can see him from the kitchen in a mirror which reflects into the living room, I say: 'Bill, come empty the garbage.'" (Laughter.)

I would like to give you some of my little poems that have been written in a simple sort of a way. Over at the Indianapolis News they call me the Happiness Editor, for I haven't sense enough to be serious. I always hunt for the pleasant things to write about. During the war I wrote a bit of darky verse. I was going out to the Speedway, and an airplane passed over. I saw an old darkey standing on what we call the Yellow Bridge watching the airplane. His hands were on his hips. I watched him a while and knew he must have a little philosophy about it. He made me think of two darkies who saw an airplane. One said, "Say, Pete, that is certainly marvelous. Isn't that wonderful, flying around up there?" The other darkey replied, "Yes, Mose, but how would you like to be up there without one?" I walked over to my friend on the bridge, and remarked: "That is certainly some plane up there! How would you like to be up there?" He looked up at the airship and said, "Huh-uh! Not me!"

Huh-Uh! Not Me!

Co'se Ah ain't sayin' Ah won't do
Jes whut ma country want me to,
But dey's one job dat Ah fo'see
Ain't gwine to tach itself to me—
Huh-uh! Not me!

Dat's dis heah ahplane stuff—No, Boss,
Ah'll bah some othah kin ob cross
Lak drive a mule, er tote a gun,
But Ah ain't flirtin' wif de sun—
Huh-uh! Not me!

Ef Ah must do a loop-de-loop
Let mine be 'round some chicken coop;
It ain't gwine be up whah de crows
Kin say Ah's trompin on deir toes—
Huh-uh! Not me!

It sho' look sweet, Ah don't deny,
To be a-oozin' 'roun' de sky,
But dat's fo' folks dat's in de mood
To pass up love an' gin an' food—
Huh-uh! Not me!

Down heah Ah firs' saw light ob day,
Down heah am whah Ah's gwine t' stay;
Folks, Ah don't keer to hab ma feet
Git too blamed proud to walk de street—
Huh-uh! Not me!

So, Ah'll des wait till Gabriel brings
Dem good ole-fashio' angel wings
Den, as Ah pass de ahplanes by,
In pity, Ah'll look down and sigh—
Huh-uh! Not me!

(Applause.)

The mayor was speaking a while ago of the present day fashions and how ladies were dressing. I felt perhaps the ladies might be interested in this little poem. I'll leave it to you girls.

The Muddled Modes.

Yes, Time has devised many changes, my brother,
I'm not the beau bravo you once used to know.
Perhaps I've slowed up, Bud, but somehow or other
I don't make the breeze that I did years ago.
I now stand around like some preacher on pension,
And, Bud, you may grasp what my platitudes mean,
When I remark that I'm under great tension
Since Sister looks forty and Mother sixteen!
You don't live at home, Bud; you miss the confusion
That comes of the styles as they're wearing 'em now.



William Herschell.

My days' are all spent in a maze of illusion—
I can't tell our Mother from Sister somehow.
Oft times as I gaze down the walks of the garden
I see a trim figure with grace of a queen;
It looks like our Sister, but—I must beg pardon—
It's short skirted Mother—not forty—sixteen!
And Sister—dear Sister—that idolized creature
With stately composure she sweeps through the hall!
The girlishness banished from coiffure and feature—
You'd think her teens vanished forever and all.
She trips off with Mother to tea or cotillion;
They one-step and fox-trot in chumship serene.
And no man would dare—not one in a million—
To say which was forty and which was—sixteen!
I see them down town in the bargaining Meccas,
My heart beats with pride as they gallivant by;
Oh yes, they walk dance steps—the Eves and Rebekahs
Now move with new grace that is youthful and spry.
And, brother, I like it—with all my inertness—
The man who disdains it is sordid and mean.
For, though they confuse me, I like their alertness—
Ma rivals at forty our Sis at sixteen!

(Permission Bobbs-Merrill Co.)

A little fellow living across the street from me has one of those wonderful mothers who is always at home. On this occasion, however, she was away and I saw little Roger come

home from school. He tried the front door, then ran out and looked up the street. Next he called over to me, "Uncle Bill"—all the kids on my street call me "Uncle Bill"—"Do you know where my mother is? She ain't at home, and she never was that way before." And I wrote this for Roger.

When Ain't Nobody Home.

When ain't nobody home! Gee whiz,
That's 'bout the toughest time they is!
Come home from school and run around
To where your mother's always found
An' she ain't there! Th' kitchen's dark
An' locked as fast as Noah's ark.
Th' front door, too, is bolted tight
An' gee, it's purty nearly night.
You feel a lonesome feelin' come
Your heart beats sad—just like a drum
When someone's dead—an' there's a gloom
Around your house like it's a tomb.
You peep in through th' window, too,
An' all inside looks cold an' blue.
An' then there comes that awful dread—
Someone's been there an' killed her dead!
You think you smell th' flowers an' see
Those cards that say "In Sympathy."
How awful good she was to you.
Then you begin to think it's true
Oh, if she'd just unlock the door
You'd never sass her any more.
You'd never sit around an' pout
When ashes must be carried out.
Oh, there's a million things you'd do
If only she'd come back to you.
You'd leave the cookies on the shelf
You'd wash behind your ears yourself.
You'd— who's that comin' up th' street?
Whose footfall could be half as sweet?
It's her! Your mother, sweet an' good—
She'd just been 'round the neighborhood!

(Applause.)

I have listened to so much oratory tonight I am not in good voice myself. I think I am going to close with a bit of verse that has attracted some attention. Folks call it human. I call it "A Migrant Melody." It tells of a boy who came down from a theatre gallery one day, whistling a popular melody he had heard at the show.

A Migrant Melody.

"There came from the alley and into the street
The haunting refrain of a melody sweet;
A whistling street urchin had carried it down
From his gallery throne to a turbulent town.
The song had a thrill in its every note,
It sweetened the lips and it gladdened the throat.
It danced on its way from the happy boy's heart
To Sicily Joe of the strawberry cart.
Joe gathered it up with a welcoming zeal
And shared it with Tim on the taxicab's wheel
Tim carried it on till he came to a stop
And whistled the tune for a boulevard cop.
The boulevard cop found the turnkey alone
And sang him the melody over the phone.
The turnkey, good fellow, in whose heart yet dwells
God's pity, soon sent it down into the cells,
The prisoners took cheer in melody sweet
And out through the bars it went back to the street.
The boy who had first sent the song on its way,
Said, "Funny, that's twice I have heard that today!"
And so, as the song again played on his lips,
He met some seafaring men bound for their ships.
He gave it to them, and they carried it on;
Well, nobody knows just how far it has gone.
Which all goes to prove that when God would spread joy,
He finds He can always depend on a boy!"

(Continued applause.)

I hardly know what to do for you, folks. I think I had better tell you the story of "Long Boy," my war song:

"Good bye, Ma, good bye, Pa,
Good bye, Mule, with your old he haw!"

The American soldiers sang "Long Boy" as they sang the other war songs. One day an American ship was waiting to land at Bordeaux. To pass the time, they were singing all the new songs, and they sang "Long Boy." Later a Paris newspaper man said to an American doughboy, "Do you know the Germans are saying that you fellows are coming over here and don't know what the war's about." "Sure, we don't, we got a song that says we don't know what the war's about." They sang "Long Boy" for the French man. He wrote a story about it. We got a copy of the Paris paper at the Indianapolis News office, and I wanted to know how "Long Boy" translated from French to English. The "Good bye, Ma, good bye, Pa, Good bye Mule, with yer old Hee Haw!" translated as follows.

"Adieu, Mamma! Adieu Papa!
Adieu, Mule, that neighs so agreeably!"

Let me read to you the New Year's sentiments of Traffic Officer No. 1922, a new and very young officer, as he stood at his "Stop" and "Go" semaphore on New Year's eve:

Traffic Officer No. 1922.

Stop riding last year's Trouble Bus,
Stop feeling sad and blue;
Stop knocking Nineteen-twenty-one,
Stop doubting 'Twenty-two,
Stop saying gloom endures;
Stop envying your rival's luck,
Stop now lamenting yours.
Stop springing ancient alibis,
Stop thinking them at all;
Stop crying to each friend you meet,
Stop backing toward the wall.
Stop eating of the husks,
Stop saying times are hard.
Stop worrying about your tires,
Stop driving 'round in low;
Stop saving on the Peppy Gas,
Stop all that stuff—and Go!

Go get yourself a Grinmobile,
Go get equipped for speed;
Go after everything in sight,
Go get the joys you need.
Go smiling to your daily task,
Go after business, too;
Go where it never was before,
Go where it waits for you.
Go where the jokers congregate,
Go tell a few, and then
Go home and tell them to your wife,
Go pass them 'round again.
Go where you think the blues abide,
Go where the gloomers sit;
Go hear their pessimistic plaint,
Go talk them out of it!
Go make them all stand up and shout;
"Go, 'Twenty-one! Adieu!"
Go flood the world with but one song;
"Go big in 'Twenty-two!"

(Loud applause.)

Toastmaster Beveridge: Ladies and gentlemen, I should have told you when introducing Mr. Herschell, we belong to a little club called the Skulker's Club. We don't do a thing in the world Frank Wicks could object to. We are all of Scotch blood but one. We tell of the wonderful people of Scotch blood, and we tell each other that no matter how

great America is, it would not amount to a whoop if it were not for us fellows."

But we have reached the end, and we hope it has been for you as it has been for us, it is the end of a perfect day. (Applause.) We want you to know that Indianapolis and Indiana people are chained to you with the golden links of

friendship. (Applause.) We thank you heartily for having favored us by making this town the place where you have held your convention, and we want you to go away knowing that you could not possibly do us a greater favor than to visit us again, and we ask that in the meantime you will hold us in your kindest thoughts. (Loud applause.)



Written for THE CLAY-WORKER.

THE ORIGIN OF BRICK.

Article No. 4.

Romans became master brick makers, acquiring their knowledge during their occupation of Egypt. While the art of burning brick was discovered by the Babylonians about 4500 B. C., the Romans were the first to burn brick in a stationary kiln, which was about the beginning of the Christian era. These kilns were about the same pattern, the setting and the firing, as our present clamp kilns. Caesar was one of the first Romans to use burnt brick. In the year 44 B. C. he built the wall of Rostra.

Roman brick in the time of Pliny were made in three sizes which ranged from $\frac{1}{2}$ inch to 2 inches thick, 7 inches wide and 7 inches to 18 inches long, and were used extensively for buildings to a height of seventy feet, as it was thought they would not stand a load of more height. Concrete walls were faced with brick and broken fragments of irregular shape, in the middle of the first century B. C., in order to save brick, but still have the brick effect, but in the latter part of the first century A. D. they made thin brick especially for this purpose. Even partition walls as thin as 3 inches were faced with brick on both sides.

Pliny ordered all brick to be marked and requested the architects only to use sun-dried brick after they were two years old. Vitruvius made a law at Utica that sun-dried brick should be 5 years old before they were used.

The Romans were very careful in the selection of their clay, preferring a whitish or reddish clay. After the clay was tempered and moulded the drying took place, either in open air or under sheltered roofs, when thoroughly dry they were placed in the kiln for burning and the ones for sun-dried use were placed under cover out of the weather. The Romans special time for making brick was in the spring and fall. Soldiers for military purpose were largely used for the manufacture of brick.

With the expansion of the Roman Empire brick penetrated every corner of the European continent and found its way across the channel to the British Isles, about 44 A. D., and was manufactured under the direction of Alfred the Great in A. D. 886. In these early days children were used a great deal in the brick plants as laborers. The task for two children was to carry enough clay to make 3,000 brick from the clay banks; at one plant their trips combined made $12\frac{1}{2}$ miles per day, and a day's work was 13 hours.

The art of brick making seems to have been lost when the Romans withdrew from Britain, and it is doubtful if any burnt brick were made in Britain from that time until the 13th century, and it is thought any brick used during this time came from ruins of old Roman buildings, such as at Colchester and St. Albans Abbey. One of the earliest existing brick buildings, erected after the revival of brick making in England, is Little Wenham Hall in Suffolk, built about 1210 A. D., but not until the 15th century did bricks come into general use again, and then only for important edifices.

During the reign of Henry VIII brick making was brought to great perfection, probably by workmen brought from Flanders, and the older portions of St. James Palace and Hampton Court Palace remain to testify to the skill they attained.

The great London fire in 1666 transformed her from a wooden to a brick city, great activities were given to brick, not only the development of brick manufacturing plants, but also to ornamental brick, and the use of the same to buildings. Up to the reign of Charles I brick of various sizes were made, but in 1625, the first year of his reign, the size of brick was regulated by statute and the present standard form $3 \times 4\frac{1}{4} \times 9$ was adopted.

There can be no doubt that up to the time the influence of Flanders and Holland in English brick making and bond was formative, and that under this influence a native bond, the Old English, which was substantially the Old Dutch, modified by alternating a pure stretcher course with the header course, was developed, being regarded as structurally the strongest and most reliable bond. But with Charles II and James II a stronger artistic sense invaded the island from the continent so that it is very natural to find the appearance of the Flemish bond in English buildings.

In the year 1784 a duty of one-half a crown per 1,000 was imposed on the brick of all kinds. Ten years later it was raised to 4s per 1,000. In 1803 a classified schedule of duties on brick and tile of different qualities and sizes was used. This remained in force for 30 years, when the duty on common brick was raised and the tile was exempt of any tax, and 1850 the tax on brick was taken off. The brick industry in England started to flourish at that time and the capital invested in the brick industry at that time was about £2,000,000.

In England, as early as 1619, there are letters of patent. The eleventh one being for the protection of the "Art of making a certain engine to make and cast clay brick and tile." In 1839 a machine was patented to make 18,000 brick in ten hours. In 1868 forty-seven patents relating to brick and their manufacture had been granted.

In 1629 we have a record of 10,000 brick sent from London, England, to Massachusetts, which was used in the construction of fire-places. In the same year the first brick-kiln was built at Salem, Mass.

Among the first brick buildings built in the United States that we have record of was built on Manhattan Island in 1633 by a governor of the Dutch West India Company. These brick were shipped here from Holland. In 1643 a brick watch house was built on Fort Hill, in the town of Plymouth, the brick were sold at 11s per 1,000.

The first brick made in the Anglicon Colonies were made in Virginia as early as 1612 during the administration of Sir Thomas Gates. The first church in Virginia was of brick and was destroyed during Bacon's rebellion in 1676.

In 1667 the Massachusetts court appointed a committee to frame a law to regulate the size and manufacture of brick.

In 1677 a brick college edifice was built at Cambridge and in 1694 a brick meeting house. Two years before this the General Court required buildings above a certain size to be built of brick or stone and their roofs covered with slate or tile.

WHAT SHOULD A FOREMAN KNOW?

What Course of Studies Should Young Men Pursue to Qualify Themselves for Foremanship in the Clayworking Industries? And What Knowledge and Information Should the Working Foreman Possess or Have Handy for Reference in His Calling?

ONE DAY THERE CAME to the writer the question, presumably from a young man with ambitions, as to the course of studies he should pursue to qualify as a foreman. That question could not be answered definitely. He was referred to a prominent institution which publishes a business library and various courses of study in business topics by correspondence, to his local Y. M. C. A. for probable subjects of value and advice, and advised to make inquiry of his local public school authorities for opportunities to study special subjects attached either to public schools, vocational school or colleges.

Then, some thinking was done, some canvassing of the question of foremanship and what is being undertaken in the way of special training for this work or rather of special studies and schooling for the work. The result of this was to discover that in several lines of industry there is now a distinct movement toward a more specific training in foremanship or rather a more specific teaching of special subjects of study which seem to be advisable in qualifying one for foremanship in certain lines of work.

Now, then, what about foremanship in the clayworking industry? Who among you can tell us what a young man should study to help qualify him for successful foremanship? Who can chart or set forth specifically what academic knowledge a foreman should have and just what training he should go through to properly qualify?

There is not so far as known any set of books or any special course of studies which a young man may take up and concentrate upon covering methods of clay-working that will furnish him the positive knowledge he should have in this business. This is knowledge to be gained here and there buried in a mass of other information, but unless we dig it out and put it into condensed or specific form, it is not likely to be used or to benefit the aspirant for foremanship in the clayworking industry.

Plainly, therefore, it is up to us to get busy, compile and put in definite form information and data which will constitute a course of study for foremanship in clay-working. Information that will not only assist the young man who desires to learn, but will be equally useful to the older man already engaged in this work. That is the purpose of the present undertaking, to pave the way to the compiling into specific forms, technical and practical, information that will be useful in foremanship. In this work it is desired to enlist the co-operation of machinery people, kiln experts, owners of clayworking plants and others interested in the future progress and welfare of the industry.

What it seems is most desired is the getting together in definite form some text-books or hand-books on foremanship in clayworking covering, first, broad knowledge and general facts, then going into details of the different branches and division of the work involved in the clayworking field.

This information should constitute a course of study for young men who seek to qualify for foremanship, and furnish study and ready reference for improving the foremanship of those already engaged in this calling.

There are also other questions of how such information may be used, whether it should become part of vocational schooling, a department available in public schools or colleges, put in the form of a correspondence course, and so on. These are problems to be solved later, however, the main

problem today is that of arousing an active interest which will result in developing specific data and information that will be useful in foremanship.

The industry has in the past given some attention to the subject of vocational schools especially for the training of bricklayers. Also, it has encouraged the development of courses in ceramics at universities. Moreover, we have today some splendid ceramic courses and opportunities at colleges and universities for young men to study the higher technology of clayworking. It is desirable, too, that a fair share of the younger generation take advantage of these subjects. They are good and we need more people studying them. They do not, however, fill the gap between the higher technical knowledge and the practical everyday details of work. Moreover, there are many ambitious and deserving men who are not in position to attend college and take advantage of these courses. Therefore, the question, "What studies may we select that will be useful and beneficial to the army of deserving men who either have charge of clayworking or have ambition to take charge of such work?"

The clayworking industry and the technical machinery division, which is keenly interested in the welfare and progress of clayworking, can render a great service to itself by co-operating in efforts to glean and set forth in specific form information and study courses for foremen.

What should the foreman know? That is the big question. There are a number of other questions, such as what training he should go through, and what specific knowledge is essential to foremanship in various divisions and branches of the work, but it all starts with the one question, what should a foreman know?

Let us seek the answer to that question, for in the finding of it we will have something of distinct value not only to individual men in charge of clayworking operations, but also to the clayworking industry as a whole. The slogan of the day is or should be, "Better Brick At Lower Cost," and one way to get better brick at lower cost is through better foremanship. And surely the compiling of information on the subject of what a foreman should know will help some to improve foremanship.

SPECIAL CEMENTS FROM DOLOMITE AND KAOLIN.

THE USE OF DOLOMITE as a substitute for magnesite for oxychloride cements has been the subject of experimental research by the Ceramic Experiment Station of the Bureau of Mines at Columbus, Ohio. It was found that free lime in dolomite calcined above 800 causes excessive shrinkage and cracking of the finished cement. Cement with practically no free lime may be made by calcining the dolomite to a low temperature (600-C) thus decomposing the magnesium carbonate but not the calcium carbonate.

Dolomite was calcined at a high temperature (1,000) and suitable agents were added to react with the free lime. By this method the troublesome effects of lime are overcome and its cementing properties can be used to advantage. Two cements were made, one by using kaolin calcined at 750 to dolomite calcined at 1,000 the lime and calcined kaolin combining to form a pozzuolana cement.

The second cement was prepared by adding enough magnesium sulphate to milk of dolomite to react with the lime, and by calcining the resultant mixture at 1,000, the calcium sulphate being thereby converted into Estrich plaster. By adding enough magnesium chloride to react with the magnesia present a cement composed of Estrich plaster and magnesium oxychloride cement was obtained, which becomes extremely hard, but is not as resistant to water as the clay-dolomite cements.

THE IMPORTANCE OF SUB-DRAINAGE IN GOOD ROAD CONSTRUCTION.

By James E. Randall.

MANY of the leading experts on good road construction are agreed upon the idea that the proper sub-drainage is the important fundamental in good road building.

A road is no stronger than the earth forming the sub-grade on which it rests. It is acknowledged that in the summer time when the ground is very dry and the water level low, little or no destruction occurs to the road from any kind of traffic, but that the greatest destruction to our roads occurs in the winter and spring months, due to the freezing and thawing made possible by the moisture in the ground at that time. Moisture and frost are two elements that destroy a road. They expand, loosen and make slippery and unstable the soil underlying the road and thus make weak the support of the overlying road surface. We must eliminate these two elements and can do so only by sub-drainage and water-proofing. Surface drainage is all right so far as it goes, but does not prevent an injurious amount of water from seeping into the soil beneath the roads. So from this we can draw the conclusion that the fundamental principle in road building of any kind of construction is to so build that the sub-grade shall be dry 365 days in the year. This can only be accomplished thorough sub-drainage, making the sub-grade dry and keeping it dry by preventing water from getting in from the sides, and water-proofing the surface by oil or an impervious material such as brick to prevent water from getting in from the top.

The Fundamentals of Good Road Construction.

If you can keep four feet depth of road dry 365 days during the year, that is all that is necessary to have a good road. A permanently dry sub-grade gives perfect assurance against underneath injury, which is the general cause of failure of the road surface. The hard surface road will do away with oil and especially if it is brick, it will be dustless and almost everlasting, giving the horses a sure foot-hold and insuring easy traffic during all seasons of the year.

Successful Plans.

There are plans advocated by drainage experts that have been doing effective work in certain types of soils. One string of tile under the center of the road is not sufficient simply because it draws the water to the center. A string of tile on either side of the road-bed draws the water away from the road-bed. Mr. W. P. Graham of Rochelle, Ill., a highway commissioner of Ogle County, Ill., has been doing splendid work constructing roads and backing up his knowledge and experience with enthusiasm and earnestness in behalf of the taxpayers in his portion of the state. Mr. Graham advocates two strings of tile parallel with the road, 18 feet apart and laying all from 3½ to 4 feet, or better, deep in accordance with outlet, then grading the road with 50 per cent less crown than would ordinarily be done if road was not tiled, allowing the grade then to settle for one year or more, keeping it dragged, then swept well and oiled.

"Following this plan," says Mr. Graham, "you have a 365 day road for all time with small cost of maintenance for the 18 feet between the tile will get dryer and harder every year and in five years the moisture is practically eliminated from the 18 feet of ground and consequently, during the winter months, very little frost will enter this part of the road. When you have produced such a condition, and it is absolutely possible to do this, you have the highest type of dirt road construction and there is no road better to drive on than a

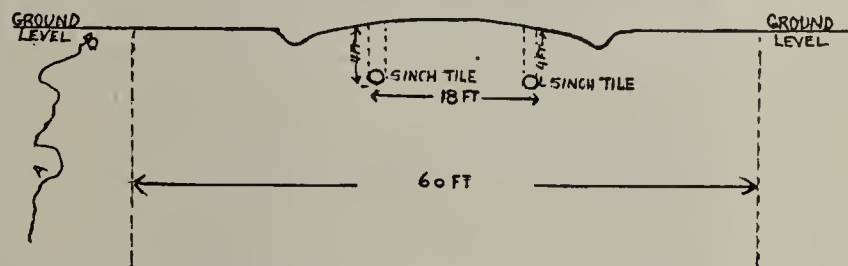
good dirt road, and should one want to make a hard road of this, he has the very best foundation and will need only half as much material to build the hard road, thereby eliminating a lot of expense, to say nothing about a good dirt road until such time as the hard road is necessary.

"As an example, we had one mile of hard road in our township, with a quicksand bottom, and for many months of the year this road was in a frightful condition because of the quicksand filling with water, consequently weakening the base and destroying the road. The taxpayers found it impossible to keep this road in repair.

"I tiled this road with two strings of tile 18 feet apart, scarified the surface, and added to the surface a small amount of stone, more to clean it than anything else, so I could use an asphalt dressing. Then rolled it well, asphalted the top, and it has been in use four summers and four winters, with very heavy traffic, and they have not made a mark in the road, the resurfacing costing only \$1,800 per mile on an average haul of three miles. I could duplicate this job for \$350 less per mile, as this was my first experience.

"The results obtained here can be obtained on any type of dirt road in any locality.

"History repeats itself in everything, and it has done so in road building, and we have found that all over the country



When the water rises up in the ground as of line A to a point at B, the lateral pressure forces towards the tile on both sides and is taken away, so that no water ever gets into the space 18 feet wide and 4 feet deep, directly under the traffic line and the water-proof top keeps it from entering there, therefore a dry cake of ground that will never give way. Dirt roads can be made 365 day roads in this manner.

roads built on what was considered a permanent foundation showed in ten or fifteen years to be anything but permanent, because of the capillary attraction of the water below this construction, which some years came high enough to affect the road, and down went your construction. The plan which I have suggested will eliminate every bit of this trouble. It matters not what type of soil you have or how much water you have, it is possible to dry 18 feet of the ground between the two strings of tile, if that space has been properly crowned, oiled, concreted, asphalted or bricked, which will serve as a waterproof top. This system prevents water from coming in from the sides, no matter how high the water level is outside, and then the waterproof top prevents the water entering from the top of the road, and therefore you have dry space of ground the depth of your tile, which is the best type of foundation for any road.

"I believe the thinking people of today who are following this road question are almost satisfied that a brick construction on a much traveled road is practically the only road that will hold up outside of dirt when a dirt road is dry. Where the road is excessively traveled, the dust, so injurious to most crops growing near the road, is eliminated by the use of brick

for the wearing surface. For this reason this road question, in my judgment, resolves itself to this: if we will tile our roads and then grade them and allow them to settle two years and oil them, we will have the best roads in the world until the time comes when we can afford the brick, and on much-traveled roads the brick road will eventually be put in. Thus, if the dirt road has been sub-drained previously, the brick road when built will have the most satisfactory foundation possible."

Mr. Graham built the road mentioned seven years ago. We wrote him recently asking for information regarding its present condition and as to recommendations he cared to make at this time. In reply we received the following letter:

Rockford, Ill., Nov. 7, 1921.

Mr. J. E. Randall, Indianapolis, Ind.:

Dear Mr. Randall—I can offer you no change in my plan of the sub-drainage of roads, and, further, I think more of the plan each year. The road I built has been used now seven years with very heavy traffic, and is in excellent condition today, and it cost \$1,800 to surface it.

The edge of that road, or new surface, is not over 3 to 4 inches thick, and yet I would be only too glad to have you drive an 11-ton tractor, with inch-and-a-half lugs on the wheels, on that road, and put the big wheel right on the edge, and you will not destroy it. It has been done a number of times, and not long ago, when I examined the road, it was all there. The original bed of this road was water and quicksand.

The two strings of tile are sufficient; it will do the business and do it right.

I cannot understand why people do not seem to see the practical part of the sub-drainage of road beds.

Very truly yours,

W. P. GRAHAM.

It is claimed by some of our leading men in road-building construction that breaks in the surface of a cement road are not due to expansion, but instead are caused by contraction. They have it worked out scientifically and as nearly accurate as these matters can be determined, and inspection of roads with cross-breaks indicate that they are right in their analysis. They claim that the lengthwise cracks are caused by water running off the edge of the hard surface and puddling underneath the slab, so that for considerable space the concrete rests on nothing and is merely a bridge resting on the high point of the sub-base, and that when the traffic becomes heavy enough it will break down. All of this proves that the sub-base should be bone-dry and kept so.

Mr. Graham had a certain type of soil to consider in his section of Illinois and we heartily indorse his method, but we would go a step further. The far greater area of soils in the country are of a plastic character, through which water seeps slowly, but when once saturated renders the soil exceedingly unstable, and, if frozen, expands and later contracts with great force, effecting severe injury to the road surface.

An Ideal System of Sub-Drainage.

Mr. Will P. Blair, a member of the Committee on Sub-Grade and its Relation to Road Surfacing and Traffic, of the Federal Highway Council, which is carrying on some splendid research work along this line, in a recent conversation with the writer advocated the following treatment which he believes (and, indeed, it appeals strongly to me) will maintain a sub-grade of such soils in a dry condition, preserving the roadbed from injury resulting from both capillary and lateral water saturation and securing a maximum stabilization. In farm drainage capillary water is very beneficial, but in road drainage it is detrimental. We must remove every chance for moisture in the sub-grade, hence the system of sub-drain-

age must be more elaborate, and with this thought in mind, Mr. Blair's system has much merit.

The disposal drain is placed 8 feet from either edge of the wearing surface of the road; this receives surface water flow through the surface water inlets, also flow of water from lateral drains placed underneath the road, as well as all the seepage water estopped by the perpendicular of coarse gravel, broken stone or slag extending from main drain 6 feet below the surface to a point near the top of the ground.

The lateral drains underneath the roadway are placed (according to the character of the soil) 10 to 20 feet apart,

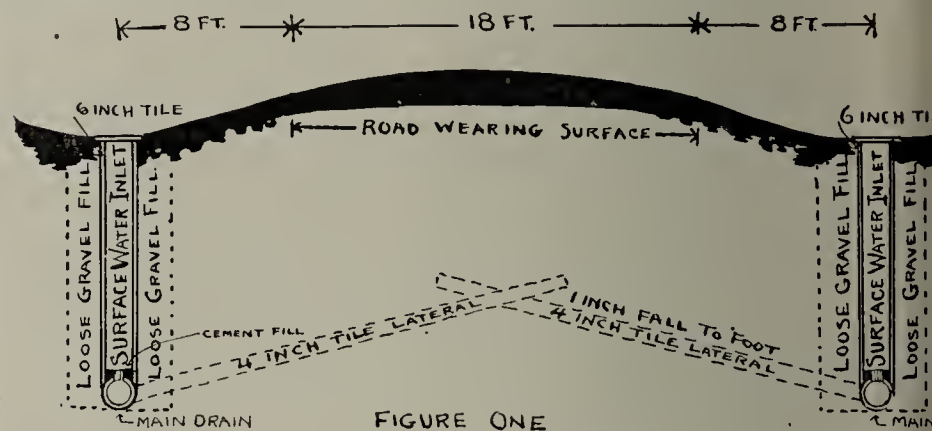


FIGURE ONE

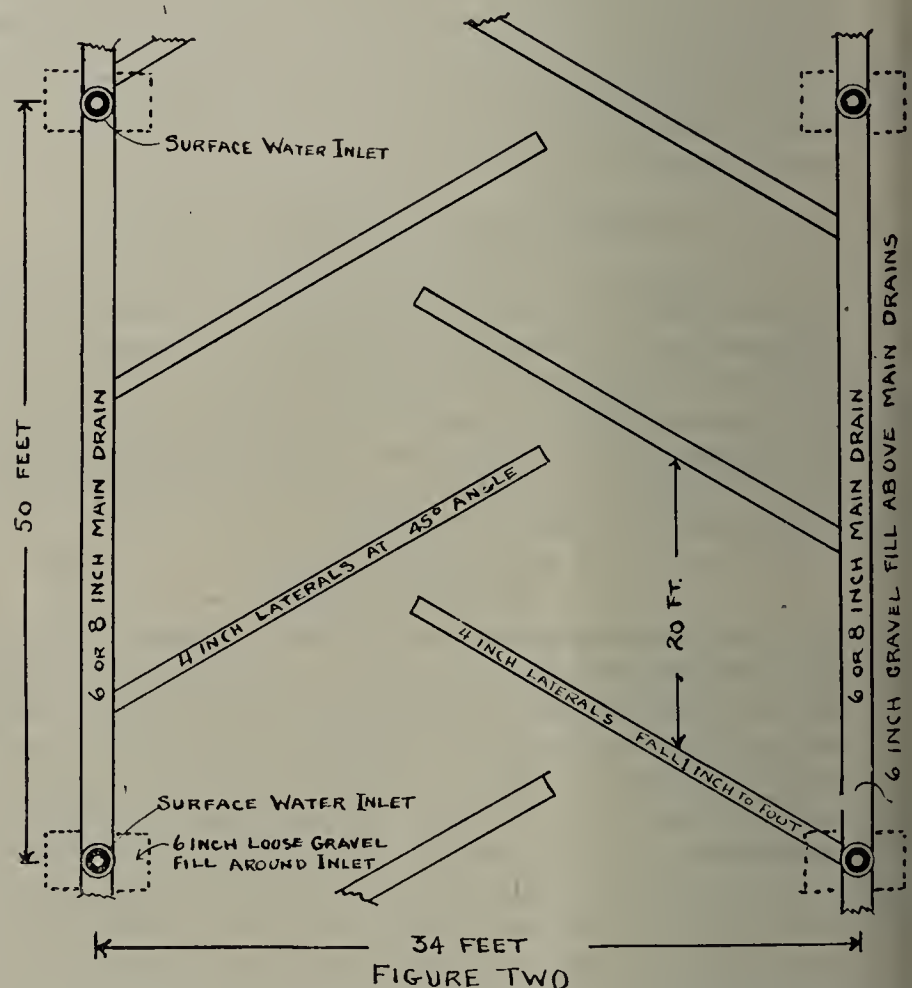


FIGURE TWO

Two Sectional Drawings of a System for the Sub-drainage of Roads That Will Eliminate Entirely Any Danger From Water and Make the Sub-grade Dry 365 Days in the Year and an Extra Day in Leap Year, Guaranteeing for All Times Ideal Road Conditions.

with a fall of 1 inch to the foot, and leading into the main drain at an angle of 45 degrees.

The placement of the lateral lines underneath the road at such shorter distances apart than is required in farm under-drainage is deemed advisable for the prevention of the capillary action and to thus keep the road in a drier condition than in the other system.

Advantages.

The system is below the influence of frost, taking away moisture in winter as well as in summer.

Eliminates extraordinary expense of the open ditch, which, if it functions at all, must have constant attention, especially in the spring of the year.

Eliminates expense of keeping the roadside mowed, which can be done only by hand, in case of the open ditch, but installing system as outlined, roadsides can be mowed with ordinary farm horse-power mower, and the field can be cultivated much nearer the roadside, increasing materially the area to be farmed.

Eliminates the dangers of accidents caused by the menace of the treacherous open ditch.

We must bear in mind that the almost universal method of drainage is the construction of big open ditches on the side of the road. But observation as to their behavior and the disadvantages of this character of drainage needs to be given careful consideration to arrive at an answer as to whether or not it is the best and most economical method for securing the results wished for.

In the first place, the construction of these side ditches costs a lot of money. It costs a great deal more to maintain them. In the winter, following a frozen condition, with a succeeding rainfall, they become dammed up at places and do not function. Instead we have a system of reservoirs along the side of the road by which moisture is supplied to the sub-grade by capillary attraction, furnishing to the roadbed and sub-soil underneath the very element of destruction which we wish to avoid. More rain, greater saturation and more frost, ends in the complete destruction of the road, so that it is made entirely unfit for travel. Then again, in the summer time, when we go to mow the weeds and briars from the roadside, the expense mounts high, when if the same operation could be performed with a mower the expense would be insignificant.

Again, these open ditches by the roadside are and always were a hazard of danger, and particularly so now, when so many automobiles are used upon the road; these side ditches are as dangerous to life as if the precipice was multiplied to one hundred feet. The destruction resulting from a plunge into the ditch is equally fatal.

Contrasted with this method of drainage, and at no greater expense in the end, is the resort to the more liberal use of drain tile. This can be placed as disposal drains on either side of the road and takes the place of the open ditch. Below the freezing point, they will work at all times, winter and summer, whenever there is sufficient moisture in the ground to be carried to a final disposal place. Then frequent drains underneath the roadbed itself, leading to the disposal tiles on either side of the road, will tend to prevent the roadbed saturation from capillary movement of moisture. The direct rainfall can readily be cared for at manhole openings located at short distances from each other. In soils through which water flows exceptionally slow, this system can be supplemented by placing over the entire area tile drained, a layer of broken stone, gravel, rotten rock, or slag; this will both accelerate the flow of water to the tile and prevent any flow of water by capillary action into the upper structure of the road.

Thus the employment of a liberal use of drain tile for road drainage not only affords, but it is the only manner at present known of successful road drainage. It does not entail the everlasting annual expense and functions efficiently for the purpose, so that in the end it is far less expensive than the open ditch.

The use of drain tile for road drainage in this manner is of equal importance regardless of the character of the wearing surface. It adds to the durability of the brick road and is absolutely essential to the life of a road of any character. Even a graded dirt road is benefited much beyond the expense

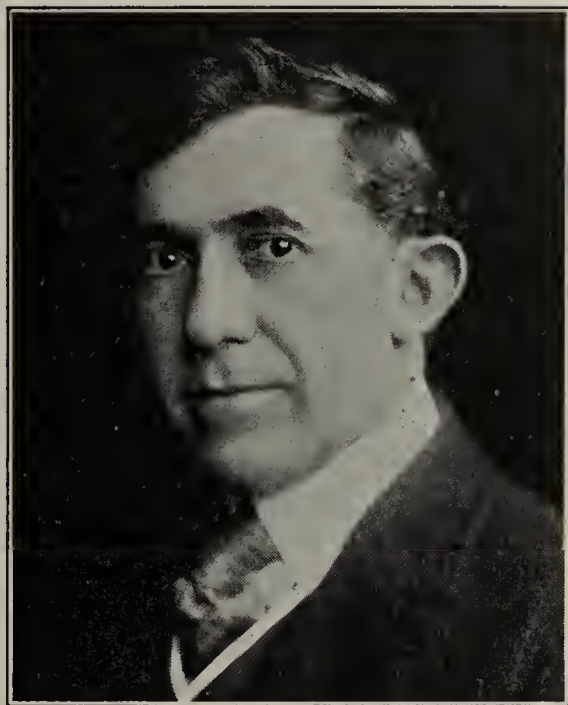
necessary for the installation of a drainage system by the use of the tile, making the drainage structure a permanent and lasting one and thus eliminating a recurrence of expense which has become an annual tax and a great burden to road upkeep throughout the country.

JOINS HADFIELD-PENFIELD FORCE.

Arthur Whitcraft, M. E., well and favorably known in the steel field has assumed charge of the manganese steel sales department of The Hadfield-Penfield Steel Company with headquarters at Bucyrus, Ohio. Mr. Whitcraft was for a number of years successfully with the Marion Steam Shovel Company, American Locomotive Company, and New York Central Railroad. He was in charge of erection, operation and supervision of heavy excavation machinery.

He was for 12 years with the American Manganese Steel Company as a Sales Engineer engaged in the design application and sale of manganese steel castings. His experience covers every phase of the work from the moulding floor thru the machine shop to the service of the castings sold.

He has had much to do with the development of new ap-



Arthur Whitcraft, Bucyrus, Ohio.

plications of manganese steel and in widening the field of its commercial use and devoted several months' time to the shop during the development of the first electric manganese steel.

During the war period he was Captain in Ordnance Department and was engaged in the work of mounting on railway cars the 12-in. and 14-in. Naval guns which were the only big American naval guns to reach the French front where they did much to bring the war to a close. Naval shells made by The Hadfield-Penfield Steel Company were used in these big guns. Mr. Whitcraft also superintended the mounting of 12-in. mortars and 8-in. barbette carriages on Railway cars. He was in charge of Rifle Grenade Plant and Aerial Drop (Demolition) Bombs.

Mr. Whitcraft is at present a Captain in Officers Reserve Corps, U. S. A.—Commanding 401st Ordnance, G. H. Q., Maintenance Company.

Some figure shark has demonstrated by statistics that the per capita debt in Mexico is only a tenth that of the United States. Even if that is right, we still prefer the American dollar to the Mexican.

CONVENTION WISCONSIN CLAY MANUFACTURERS' ASSOCIATION.

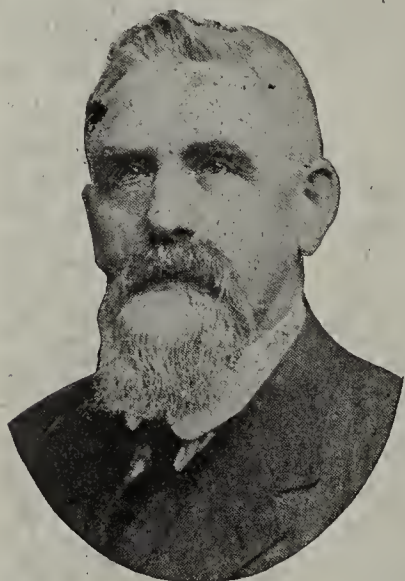
Twenty-First Meeting Held at Milwaukee Republican House, February 28th and March 1st.

MANUFACTURERS OF CLAY products in Wisconsin are looking forward to an exceptionally brisk business in 1922, with prospects decidedly favorable for one of the biggest building and construction seasons in the history of Milwaukee and other parts of the Badger State. In view of assisting the building boom by bringing the price of clay products to the lowest possible figure, action has already been taken to secure a reduction in freight rates. Other costs entering into production have already been brought down to the lowest figure possible under present conditions. Subjects on distribution of clay products, possibilities of more efficiency in the industry and competition of clay products substitutes were among the subjects that were discussed at the twenty-first annual convention of the Wisconsin Clay Manufacturers' Association, held at the Republican House, in Milwaukee, on February 28 and March 1.

John Ringle, Wausau, president of the Wisconsin association, opened the convention Tuesday morning, and presented

panied by high cost of manufacture, brought on in due course of time, slack consumption and lower prices. This condition is still with us and here we are. We are advised to reduce the cost of manufacture. This has been done to the extent that the manufacturer has taken his loss and has reduced the price of his product to present cost or value. This has not been sufficient to create the purchasing demand which was anticipated, in the face of great housing necessity. The demand to cut deeper can not apply to the manufacturer, in the face of the cost of labor, freight rates, cost of fuel and supplies. Nor is there a reason to presume that either of these items in the cost of manufacture may recede to pre-war conditions. We are confronted by a national indebtedness of twenty-three billion dollars, which must be paid, principal and interest, from the products of labor, of manufacture and the products of the soil; that means taxes. I have become convinced that the present railroad freight rates on commodities are a principal factor, causing the depressed purchasing conditions. Especially does this statement apply to freight rates on brick.

While excessive freight rates on clay products is not entirely a new condition with us, we contend that the distance rates established by the Wisconsin Commission at the instigation of this association, in 1911, remaining in force



John Ringle, Wausau.



Oscar Zimbal, Sheboygan.



Samuel Gunther, Port Washington.

the following address: He expressed the sentiment of the members in saying: "It is not my intention to minimize conditions as it applies to business generally, but we have passed through the tunnel of gloom, and view the light of a better day, so that we may look to the future with confidence."

President Ringle's Annual Address.

Gentlemen of the Wisconsin Clay Manufacturers' Association:

We meet at this time in biennial session because our 1921 meeting was passed for reasons which were deemed sufficient by the executive committee. In the year 1920, our very efficient secretary, Mr. Weidman, found it necessary to resign the position on account of his removal from the state. This association owes much to Mr. Weidman for many years of service, which were beneficial to the clay industry of Wisconsin—his determination to sever his connection with the association was very much regretted. Mr. Oscar Zimbal kindly consented to assume the duties of secretary.

On this occasion it will be my aim to refer to conditions, rather than give advice.

You all know of the strenuous conditions for the manufacturer of clay products during the past several years. Following a restriction of fuel consumption by reason of war necessity, we were urged to produce. This activity accom-

until June, 1918, was acknowledged as most equitable and serviceable to both shipper and carrier. The increase of 2 cents per 100 lbs. on brick, by order of the Director General of railroads of June 25, 1918, while the freight increase on nearly all other commodities was fixed not exceeding 25 per cent, treated the brick industry as a very distant relative to say the least.

The Wisconsin rate was thus increased on the short haul, or on distances within 20 miles, from 50 to 100 per cent or an average of over 66 per cent.

When this association met in January, 1920, it was evident that the management of railroads would again be transferred to the owners, and expected, that the question of rates would be made subject to the decision of the state commission. The result was the passage of the Esch-Cummins Law, and a further increase in railroad rates of 35 per cent in August, 1920, based upon the excessive rate referred to, making the increase on average distance shipments over 127 per cent, on single line.

As an example of the increase in rates, on a haul of 15 miles or over, from 2 30/100 cents to 6 cents per 100 lbs. 30 miles or over, from 2 75/100 cents to 7 cents per 100 lbs. 50 miles or over, from 3 35/100 cents to 7½ cents per 100 lbs. 100 miles or over, from 4 65/100 cents to 9 cents per 100 lbs.

150 miles or over, from 5 15/100 cents to 9 1/2 cents per 100 lbs.

This association protested the rate increase of 2 cents per 100 lbs., and also the further increase of 35 per cent based on that excessive increase without results.

Having in view a possible general decrease in freight rates of a percentage of existing rates, your committee in railway rates on behalf of the association has filed a complaint with the Wisconsin rate commission, asking a reduction of the excess increase on brick over that on other commodities. The committee will report in detail as is noted on the program.

I have referred to this matter to some extent to show how necessary it is for the clay product manufacturers to maintain a state association, to be prepared to function at all times. All interested in the industry should hold membership because results can only be expected by associate action. While many benefits are derived from membership by social intercourse, comparing notes relating to improvements of methods and of products, greater opportunities for betterment of condition are derived from associate action. It has become a custom and is deemed essential for men engaged in various industries to associate, for the purpose of promoting production and product, and it is important that the men engaged in clay product manufacture be united for the development of the Wisconsin industry, not only as it concerns themselves, but also for the public good, and the welfare of our good state.

We know that the lumber supply is passing and the best building material consisting of clay products must take its place in the construction of homes and business houses. We must keep abreast of the times in the matter of process and quality in providing this public necessity.

It is not my intention to minimize conditions as it applies to business generally, but we have passed through the tunnel of gloom, and view the light of a better day, so that we may look to the future with confidence. Keeping in mind the experienced fact that the producer who is alive to public needs and makes his product known, will capture the goose which lays the golden egg.

I wish to thank the members for their presence. Let us all join in and make this a pleasant and profitable convention.

I wish also to bid a hearty welcome to our friends, the producers of machinery and of the press. (Applause.)

"Proper Kind of an Association," was the subject of an interesting discussion by Ralph P. Stoddard, national secretary of the Common Brick Manufacturers' Association, of Cleveland. Mr. Stoddard referred to the recent federal action relative to opposing certain practices of some large associations, and told the Wisconsin manufacturers of what practices this federal ruling is believed to oppose. He reflected the purposes of associations, such as the Wisconsin and national clay products manufacturers and that their aims were commendable to the best interests of their members but in addition equally beneficial to public welfare. Building codes and similar subjects that have the attention of associations were also among the subjects of Mr. Stoddard's talk.

Distribution of clay building products through retail channels as an advantageous method of efficient selling was advocated by D. L. Squirts, Chicago, in an address on "Selling Clay Products Through the Retailer; Advantages and Disadvantages." The situation in Wisconsin is that most of the clay manufacturers are selling their products direct to the consumer. While it is recognized that the retailer has his place in the business world as a necessary or logical distributor, it was further pointed out that most of the Wisconsin manufacturers are situated close to the operation of much construction work and that from this angle the direct sale was advantageous to them. Where brick or other clay products are shipped to distant points for distribution, the advantages of dealing through the retailer are recognized.

On Wednesday morning the association members listened to an instructive paper prepared by R. E. Gray, Chicago, on "Reducing Power Costs by Use of Fuel Oil Engines." With the use of wood for burning purposes fast becoming a thing of the past, and coal prices being on the increase, it was pointed out that oil is probably the logical successor as fuel in burning clay products in Wisconsin, as well as other states. Oil, it was shown, has been developed into a satisfactory and more economical fuel by the development of burners which are producing a more evenly burned kiln, at a lower fuel cost and with less waste. The labor time saving element was also pointed to as another feature in favor of oil burners. In Wisconsin, with its natural wood supply, the clay industry has for many years been more or less dependent upon wood burners. In later years coal has also become a factor, while more recently the oil burner has had the attention of the manufacturers. At the present time there are only a few plants equipped with oil burners. Association members expressed themselves as greatly interested in the development of the oil burning devices, and it was indicated that a number of firms are considering such installations to replace wood and coal burners.

Following this, John J. Moroney, the Chicago Brick Machinery Co., Chicago, read a paper along the same line.

OIL AS A FUEL FOR BURNING BRICK.

John J. Moroney, Chicago.

Oil is fuel. Oil, like any other kind of fuel, has its good as well as its bad sides. It shows more advantages in the burning of clay ware than any other industrial application. There are two essential factors to burn oil successfully. One is to have the proper amount of air, and the other is to have the proper atomizing agent. The use of oil in the clay industry shows a great saving in labor. One day man and one night man could handle any number of kilns, as there is no coal to be hauled in, no ashes or clinkers to be hauled out, no grates to burn out, and no smoke.

Generally the oil furnished is termed "fuel oil." This is oil from which the more volatile oils have been distilled off, such as gasoline, naphtha and kerosene.

In burning coal in an up-draft kiln the walls are generally 24 to 26 feet. With oil with the proper atomizer the width can be easily increased from 40 to 60 feet between the burners. This wide setting gives oil the advantage, and with the proper atomizer the fire is always under control of the operator, and the heat can be regulated and directed to any part of the kiln.

I strongly recommend the gravity system for oil pressure and steam for atomizing the oil. With burners similar to those used in Chicago the fire is always under control of the operator, and the flame is regulated by a needle valve in the burner. Each turn of the hand wheel regulates the amount of the oil. This burner acts as an injector, that is, the velocity of the spray sucks in the air from the outside, thus providing air for combustion, which is as necessary for oil as for coal or wood.

As before stated, we recommend steam as an atomizing agent, and its great value is to have the steam as dry as possible, as it has better atomizing effect and breaks up the oil better. When steam is condensed, it has lost its heat and pressure.

The burner is constructed and adapted to use either air or steam for atomizing. When air is used as an atomizing agent, it has a tendency to create a short, hot flame like a blow-pipe. This in a measure localizes the heat, which in an up-draft kiln is not advantageous. Steam when used as a spraying agent is a much better carrier, and gives a long flame. The more force in atomizing, the finer the oil will be atomized, therefore, much better combustion.

(Continued on page 384)

Written for The Clay-Worker:

HOW THE EAST VIEWS 1922.

By Allen E. Beals.



CONSERVATIVE EASTERN building construction interests are inclined to look upon 1922 with the attitude said to be characteristic of those borne in the State of Missouri. The market is distinctly divided. The pessimists are those specializing in housing construction. The optimists are those who are

looking for the transition from an era of habitation building to a season of commercial and institutional erection. The habitation building specialist is pessimistic because he is told by lending institutions that while there will be plenty of money available for housing construction, the demand for this financial assistance is expected to drop considerably toward the latter part of the year owing to the fact that there is a serious question as to whether that economic saturation point in speculative housing as an investment proposition is not within sight. Two renting seasons must pass by before it be thoroughly established that habitation building construction as an investment proposition has been overdone.

If one is to believe the testimony submitted to the New York State Legislature by the Lockwood Committee, there is still an actual need for 400,000 apartments in New York City alone, or about 80,000 buildings suitable for habitation purposes.

It is frankly admitted by the Lockwood Committee that this type of construction is in demand for apartments that will rent for less than \$10 a room. At this point it is a serious question whether philanthropy will not have to step in to meet the demand or that the supply must be met by such institutions as the Metropolitan Life Insurance Co. and those capable of investing huge sums at moderate return. Tax exemption is not sufficient to induce the speculative builder to proceed with great habitation building projects if there is not a quick market for the finished product.

The day of the large order building material job such as is represented by institutional building and commercial construction, such as hotels, loft buildings, office buildings, and structures of similar type, seems to be dawning. But there also seems to be an interval between the turn from habitation building to the larger type of construction. The interval is expected to continue for some time between the middle of summer and the middle of autumn, 1922. This general impression of the housing situation is the result of the various stages of post-war readjustment that the building industry has passed through since the signing of the armistice.

New selling factors, or market controls, are becoming operative to serve the purposes of former organized sales effort. Eventually these market controls are expected to bring about market stabilization of building material supply. But at present the most significant thing is that the construction market in general is about to enter that long sought-for period of price and supply stability.

The building construction industry, particularly that in the east, has successively passed through five economic stages in its readjustment process since just before the close of the war. These stages or cycles included that of enforced restriction, artificial stimulation, conservative reaction, stampede and inflation, deflation. It is now passing through the sixth period, that of speculation. By the end of this month, when the eastern building construction season officially opens, the seventh stage, that of stabilization, will have been approached.

The day of full realization of building material price stabilization should not be expected until after the turn of the first half of the year. Barring a protracted fuel shortage

or transportation tie-ups the supply of basic building materials should begin to exceed demand by August at which time the point of certain present and prospective price peaks will have been worn to a decided curve.

Building material prices in the eastern construction market appear to have reached their permanent peak as well as their immediately prospective bottom. It is not likely that basic building materials will go below the bottoms reached in 1921 for a year or two. Building material demand will about match supply, with the usual margin of safety, for the next two to three years, based upon the present rate of projected building construction, railroad improvement and general engineering work.

The operation of some sub-surface factors that will have a bearing upon shaping the supply, price and demand of basic building materials in the next few years may be soon at work now. In the Hudson river brick manufacturing district, where the methods employed in making this important building material in early Colonial days, have been continued down to the present day, modern machinery and kilns are being installed so as to permit the production of this material all year round. Some of these new equipments were tried out



Allen E. Beals, New York City.

for the first time this winter and the results give promise of promptly working a change in the brick situation here.

No doubt, the fact that more brick has been sent into this market by rail this winter than ever before has been known, and that the Staten Island and Raritan river brick plants have had a dominant grip upon the winter brick market, has helped in some way to hasten the rejuvenation of some of the Hudson river brick plants in anticipation of the promised demand for brick this spring, but the start has been made for modernizing the Hudson river brick industry and it will operate greatly in stabilizing prices to the consumer in the near future. In the Hackensack brick manufacturing section plants that have been modernized have sold their outputs out completely to the middle of April.

Building material manufacturers may as well accept the situation as it actually is engaging the 1922 building market.

The public's demand is down when questions arise as to the fate of post-war prices, practices and production rates. It holds the whip and when it snaps the lash it chuckles cynically as builders vie for the petty crumb held forth by slashing prices to the point of winning worthless morsels which at best can do no more than hold the working gang together at a loss.

The evil that the building industry has been accused of

will rise again to haunt it in its prosperity. Its shimmering form is looming now. Its filmy finger points out the sharp practitioner here and there while decent builders draw within their office walls and await the dawn of clearer, brighter, cleaner days.

These seek no champion to proclaim their virtue to the world, for virtue is its reward. They sound no clarion to prove that they were guiltless when the profiteer ran rampant through the land. They stand serene in calmest confidence that when the filtering process ends, they will, by works, not merely words, once more tread honored paths and bask again within the public's confidence.

Time-worn abuses, large and small, that have crept into certain types of building enterprise are being rooted out of construction codes and practices, and the process is in the hands of the industry's strongest men, not only in New York, but almost everywhere throughout the land. The better day, rather than the perfect day, in the building erection industry is near at hand, but even betterment will quickly stimulate the public confidence.

It is this confidence that must return before the fetters of retarded building work are loosed, but wise men crease their brows when they ponder how the public will receive the price and building cost reaction that is bound to come. Here lies the slumbering phantom of the past and here the biggest menace of the new construction year is seen.

Assuming that the prices of building materials today is at or near the 1919 building material price levels, the public believes that by keeping up its pressure it will be able to force the various building commodities down to 1914 or pre-war levels. It forgets that after the Civil War, thirteen years elapsed before the cost of building materials reverted to the levels existing before the hostilities began.

The public has followed the wrong tactic to bring about any such condition as pre-war price levels. Its chiefest recourse to accomplish such a condition would have been to have Congress repeal its law barring foreign labor, that American labor might be greatly underbid at mill, mine, kiln and factory as well as on the building job. And while this was being done, the public should have forgotten that there was anything like a housing shortage, and have steadfastly refused to build dwellings for itself, despite the tempting tax exemption laws.

Driven frantic by the greed of crafty landlords and profiteering lessors, the public, which dearly would have loved to boycott the whole building industry, with its practices and policies of obnoxious mien, came crowding into a market where the supply of men and material was already inadequately filled. This action stopped, in time, the downward trend of building costs, but not until the manufacturing season had passed and no provision could be made for the following years' requirements.

So there has been developed a situation where the public has been trying by probe, prod and promise to force prices down, yet by creating an ever increasing demand for building materials, it is rapidly drifting into a state where that very demand will force prices up again.

When those prices begin to turn upward, as some of them did in the last quarter of 1921, it is natural to expect the public to declare that despite the revelations of 1921, the building industry is profiteering again. What then will happen no one can tell, but it seems as though by the early summer of 1922 there will be a different type of building buyer and building labor user in the market than the small order residence building buyer of 1921, and pressure of demand will sustain the higher cost of building materials that will have to come.

Present indications are that we are going to need more clay products during the year than the trade will be able to produce.

ILLINOIS CLAYWORKERS MEET.

THE JOINT CONVENTION idea was carried out quite effectively at Chicago, March 14, when the annual meeting of the Illinois Clayworkers' Association met in conjunction with the Indiana-Illinois Division of the American Face Brick Association, and the Chicago Section of the American Ceramic Society.

Under the direction of the affable secretary of the Illinois association, Professor C. Warren Parmelee, the members of that association gathered for a noon day luncheon at the LaSalle Hotel. After disposing of the eatables, President Eben Rodgers called for the various committee reports, following which the formal speakers of the occasion, Mr. Ross C. Purdy, Mr. Theodore A. Randall, and Mr. Albert H. Sheffield, were called on. The latter speaker was unavoidably detained, but Mr. W. D. Gates spoke for him, and as usual entertained those present in a manner that was most enjoyable, if frequent applause is an indication. At the close of the session, the officers were re-elected for the ensuing year.

In the evening the members of the Chicago section of the American Ceramic Society gathered at the Hotel Morrison where dinner was served at 6:00 p. m., after which D. F. Alberty read an interesting paper on "The Manufacture of Wire-Cut Single-Fire Enamel Brick." Mr. H. T. Bellamy told of experiments with a new refractory for furnaces, showing samples of the raw materials which are gathered on the sea shore of Florida south of St. Augustine. A resolution was introduced providing for the consolidation of the Illinois Clayworkers' Association with Chicago section of the American Ceramic Society, which seemed to meet with general approval and was referred to a committee to report at the next annual meeting.

BRICKMAKING MACHINERY.

Under the above title, Chambers Brothers Company, Philadelphia, has issued their catalogue Number 24, illustrating and describing their extensive line of brickmaking machinery, clay grinding and mixing machines, all carefully arranged and indexed. The latter feature is essential, for the book contains 136 pages and contains views of all manner of brick-making apparatus, including a picture of a Ring Pit Tempering wheel formerly used for grinding and tempering clay for molding brick by hand, which is very familiar to brickmakers in olden days before the modern method of preparing clay came into general use. The catalogue is profusely illustrated with fine half tone cuts, the first of which is a view of the Chambers Brothers Company machine works at 52nd and Media streets, Philadelphia. The famous Chambers auger brick machines are illustrated in fine style and interior views or sectional drawings are shown of some of them. Several pages are devoted to their cutting tables, which are made in various styles to meet the demands of the trade in different sections of the country. Either side cut or end cut brick, hollow tile or paving brick are produced with these cutters in any desired quantity. A line of large capacity granulators and clay feeders, pug mills and grinding machines are illustrated; also clay conveyors, disintegrators of various types, clay cars, brick barrows; in fact all manner of brickyard apparatus. Drying and burning equipment is also illustrated. The Chambers beveled-end kiln grates, kiln doors, and kiln tools in general, all have the distinctive Chambers mark of perfection. We presume the catalogue is intended for general distribution and that a copy may be had for the asking.

One good way to increase your store of knowledge is to exchange some of it with the other fellows.



Kilns and Stock Piles of Plant No. 6 of Pacific Clay Products Company.

PACIFIC COAST PRODUCTS CO. OPERATES SIX LARGE PLANTS.

WITH a market extending not only throughout a wide territory in the United States but well into Mexico and South America the Pacific Clay Products Company ranks as one of the most prosperous and extensive manufacturing concerns in Southern California.

The Pacific Clay Products Company at the time of its organization in 1910, under the name of Pacific Sewer Pipe Company, purchased outright the manufacturing plants and manufactured stock of five different companies, some of them with a record of successes extending over nearly a quarter of a century. The Douglass Clay Products Company and the California Clay Manufacturing Company, both of Los Angeles, the Pacific Clay Manufacturing Company and the Corona Pressed Brick & Terra Cotta Company, both of Corona, and the California Fireproof Construction Co., of Elsinore, were all firms doing a thriving business. The Pacific Sewer Pipe Company, later reorganized as the Pacific Clay Products Company, with a capitalization of \$1,000,000.00 succeeded, therefore, to the well established business and good will of the five corporations named, and created a powerful manufacturing unit in the great industrial development of the southland.

Products Varied.

The Company's products include such important items as vitrified clay sewer pipe, fire brick, face brick, fire clay flue lining, electric conduit, and a great variety of stoneware, such as jugs, jars and bowls. The distinctive yellow

bowls manufactured by this company are conceded by the trade to be the best in the United States.

The success which has attended the company has been built on the exclusive use of the exceptionally fine clay found in certain parts of Southern California, close adherence to the highest manufacturing standards, personal attention to customers' requirements and straightforward business methods.

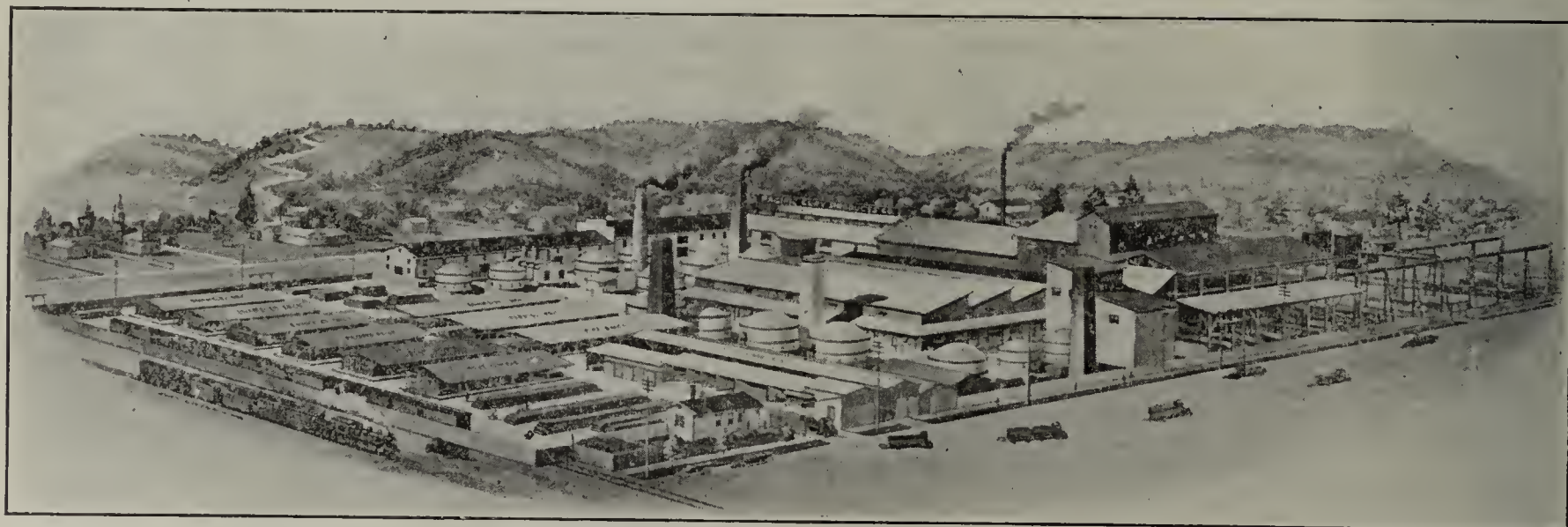
The company owns its own clay beds comprising 480 acres in Riverside County. Its plants in Los Angeles cover 28 acres, and in Los Nietos, 42 acres. One plant alone has 200,000 square feet on one floor under one roof.

In the three main plants there are 46 kilns, providing a burning area of 25,000 square feet. There are 350,000 square feet of manufacturing and storage space under roof.

Vitrified Clay Sewer Pipe.

One of the principal activities of the company is the manufacture of vitrified clay sewer pipe. The rapid development of municipalities in this section has created a strong demand for sewer systems a need which the authorities agree is best met by vitrified clay pipe. Vitrified clay is impervious to the corrosion of acid gases always generated in sewage, and likewise to alkali in the surrounding soil. This fact makes its durability practically unlimited, a tremendous advantage possessed exclusively by vitrified clay sewer pipe. In view of the expense of laying a sewer system, the one paramount consideration should be to select a pipe which will obviate the necessity of repeated installation or costly replacements. Vitrified clay sewer pipe is the only kind which makes this possible.

The qualities which make vitrified clay pipe superior for



Birdseye View of Plant No. 4 of Pacific Clay Products Company, Los Angeles, Calif.

sewer systems give it a corresponding value for irrigation purposes. On account of its smoothness, friction is reduced to a minimum and the relative carrying capacity of a given size of pipe is much greater than of pipe made of any other material.

Another department of the company which has grown rapidly is that concerned with the manufacture of face brick, fire brick, fire clay flue linings and other clay products. The company has built up a widespread reputation for the high quality of its pressed, enameled and ruffled brick, and also for its fire brick.

Superior Flue Linings.

Builders and owners are demanding more and more a fire clay lining for flues as one of the vitally important elements in fire protection. This, together with a growth in the market for gas flues, has proved an important element in the Pacific Clay Products Company's expansion during the past two years.

Throughout the ages, things made from clay have played an important part in civilization, and the future will simply be history repeating itself. It is upon this firm basis that the company feels it is building. And, favored by the great advantage of high grade raw materials near at hand, railroad transportation easily available, and export business greatly facilitated by the constantly increasing importance, of Los Angeles Harbor, it anticipates a continuance of its present sound, flourishing condition.

The officers of the Pacific Clay Products Company are Edward M. Durant, president; N. W. Stowell, vice-president; J. H. Bullard, vice-president; Archibald Douglass, secretary. These with Frederick Wightman and J. W. Swanwich compose the board of directors.

ACQUIRE PLANT INTEREST.

Mrs. C. C. Carhart has sold her entire interests in the Sheffield (Iowa) Brick & Tile Co. and the Sheffield Tile Company to H. L. and Forest E. Carhart, brothers of the late C. C. Carhart, who promoted and developed these prosperous concerns. It is understood the purchase price was something like \$200,000. The new owners of the plants are among the reliable and progressive young business men of Sheffield, and they have also been associated in the ownership of the brick and tile plants with their brother previous to his death, so that the management of the business will not be new to them. It is stated that Forrest F. Carhart will be in active charge of the business.

MACON BRICK COMPANIES FORM SALES AGENCY.

The Standard Brick Company, of Macon, Ga., has entered into an agreement with the Cherokee Brick Company, the Bibb Brick Company and the A. T. Small Brick Company, all of Macon, to handle the output of these plants. The agreement was made to effect economy in the sale of brick made by the three local companies. The manufacturing end of the companies will not be affected in any way, it was stated, and will continue operations as heretofore. W. E. Dunwody is president of the Standard Brick Company, S. T. Coleman is president of the Cherokee Brick Company, W. J. Massee is president of the Bibb Brick Company, and A. T. Small heads the A. T. Small Brick Company.

OPTIMISTIC OVER BUILDING PROSPECT.

John W. Sibley, of the Birmingham Clay Products Company, Birmingham, Ala., sees better times for the brick and building business in 1922 than for a number of years. One

of the Birmingham papers recently published an interview with Mr. Sibley, which is being quoted quite extensively. Mr. Sibley stated that in Birmingham better and more handsome homes were being built than ever before, and of course that means brick homes, and brick residences are becoming more and more popular as the matter of durability and lost cost of upkeep becomes apparent to the public. He is of the opinion that the small brick house will eventually take the place of apartments, or as Mr. Sibley so aptly puts it, "A home will take the place of an apartment." In Birmingham, there is going to be a lot of industrial building which has been waiting for lower prices and easier money, and architects are now at work on plans for a number of large building projects, in which brick and other clay products will play an important part.

HOOD BRICK COMPANY EXPANDS.

The Hood Brick Company, Atlanta, Ga., of which B. Mifflin Hood is the dynamic manager, is one of the most enterprising brick concerns in the South, operating a number of plants at various points in the southern states. In addition to the plant at Atlanta, the Hood Brick Company has built a plant at Daisy, Tenn., where quarry floor tile is manufactured exclusively, and the product is shipped to various points in New England, Canada, Mexico and the West Indies. At Melville, Tenn., is a roofing tile plant where the Hood company turns out a very high grade of roofing tile similar to the old mission tile of California. The latest plant to be erected by this company is the one at Perla, Ark., which is operated under the name of the Acme Brick Company, where they manufacture fireproofing, quarry floor tile, roofing tile and face brick. With all these interests, Mr. Hood plans still further achievements in the way of developing extensive shale deposits in Georgia, and with this as an objective the company sent three young men recently to attend the short course in ceramic engineering at the University of Illinois, Urbana.

HARBISON-WALKER ANNUAL REPORT.

The nineteenth annual report of the Harbison-Walker Refractories Company, Pittsburgh, covering operations for 1921, issued March 6, shows that earnings for the year were relatively the lowest in the history of the company, due to readjustment of wages, selling prices and inventories, but as Chairman of the Board H. W. Croft tells stockholders, they were "fairly satisfactory." Reviewing the year, Chairman Croft says that in January, 1921, sales were 30 per cent of capacity, and by April had declined to 15 per cent. By December there had been a recovery to 40 per cent. Inventories were thoroughly liquidated during the year, "and in this respect our company is in a strong position." Concerning the outlook for 1922, Chairman Croft says: "As to general conditions and future prospects of the refractories industry, our own survey of the situation after conferring with our best informed customers leads us to the belief that we can look for a continuance of business at about the same rate as in December, and while we hope to see a gradual increase in this rate, there is at present nothing in sight that would warrant any expectation for the return of normal business during the present year." The stockholders' meeting will be held April 17.

TILE WORK SPECIFICATIONS.

The Associated Tile Manufacturers, Beaver Falls, Pa., has gotten out a publication No. K-300, Details of Basic Specifications for Tile Work, which is very thorough and complete and shows that a lot of splendid effort as well as time has been devoted to the preparation of documents relating to these specifications. These publications of the Associated Tile Manufacturers should be in the hands of every dealer and user of tiles as well as manufacturers.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,400,893. Wall Construction and Brick Therefor. Robert F. F. Martin, New York, N. Y., patentee.

A brick for wall construction comprising a solid face portion, and an inner portion comprising spaced end sections constituting with the said face portion, the wall supporting portions of the brick, and an intermediate portion comprising a lateral web connecting said end sections intermediately their upper and lower surfaces, and provided intermediate its longitudinal edges and at its upper and lower sides with relatively narrow non-mortar receiving ribs.

No. 1,401,022. Arch Brick. Alfred H. Willett, West New York, N. Y., patentee.

A pair of brick members each having support engaging and brick engaging portions at opposite ends, said brick engaging portions being substantially counterpart and substantially complementary and arranged with respect to each other and the support engaging portions to make the brick members variable as to effective length to fit different spacings of supports, said brick engaging portions co-operating to provide reciprocal support for the adjacent ends of the members throughout the range of adjustment.

No. 1,399,070. Method of Firing Kilns. Frank Munhollon, Cleveland, Ohio, patentee.

The herein described method of firing kilns, which consists in causing the reverting circulation of the products of combustion by a gaseous stream under pressure, substantially as and for the purpose set forth.

No. 1,399,217. Process for Decomposing Clays. Ephraim Levitt, Westmount, Quebec, Canada, patentee.

A step in the decomposition of clay which consists in treating the clay with a flux containing boron trioxid.

No. 1,394,759. Brick. James A. Papot, Tucson, Arizona, patentee.

In a wall construction, bricks arranged to provide opposed stretcher rows, alternate built-up sections disposed between the stretcher rows, one of said sections including bricks laid on their side faces and having their adjacent edges disposed in spaced relation to provide a passageway, the adjacent section including bricks laid on their side faces, and bricks positioned on the upper side faces of the latter bricks.

No. 1,401,212. Rotary Kiln. Stephanus Johannes Vermaes, Delft, Netherlands, patentee.

A rotary kiln comprising a gas-tight barrel, means for rotating said barrel, combustion channels in the wall of said barrel, and means for supplying gas and air for combustion in said channels for heating the kiln without said combustion gases entering the interior thereof.

No. 1,389,408. Tunnel Kiln Air Heater. Louis Wilputte, New Rochelle, N. Y., patentee. Patent assigned to American Dressler Tunnel Kilns, Inc., New York, N. Y.

Air heating means comprising in combination, a structure built of refractory material and formed with a plurality of parallel combustion chambers and channels extending transversely to said chambers, a group of spaced apart pipes connected to and forming extensions of the combustion chambers, a housing inclosing said structure and pipes and closely surrounding the group of pipes but shaped to form a passage at one side of said structure which is in communication with the inter-pipe space.

No. 1,401,481. Kiln. James Harry Lemmon, Milltown, Ind., patentee.

In a kiln, the combination of an outer wall, a suitably supported interior bridge wall, said bridge wall extending substantially from side to side of the outer wall, but spaced therefrom to allow for expansion and gas supply flues communicating with the kiln chambers through said bridge wall.

No. 1,399,325. Machine for Making Building Bricks. Francis J. Straub, New Kensington, Pa., patentee.

Apparatus for molding plastic blocks comprising a movable mold, a filling device beneath which the said mold is adapted to pass, a press beneath which the said movable mold is adapted to pass, and a movable stripping device supported on trucks for receiving and transporting the molds and for stripping the blocks from the mold after the mold has been moved from beneath the press and received by said stripping device.

Trade-marks and Designs Patented.

No. 149,321. Marshall Field & Co., Chicago, Ill. Trade-mark registered for name "Kenilworth Studios" for pottery ware.

No. 149,655. Crush Brick Co., Sulphur Springs, Texas. Trade-mark registered for fire brick, face brick, fibre brick tile and hollow building tile.

No. 149,811. Acme Brick Co., Fort Worth, Texas. Trade-mark registered for bricks and drainage tiles.

No. 149,982. LaClede-Christy Clay Products Co., St. Louis, Mo. Trade-mark registered for fire brick and fire tile.

No. 1,395,764. Brick Wall. Ernst E. Oterstrom, Stockholm, Sweden, patentee.

A brick wall, consisting essentially of bricks in two different groups, one group of which in section shows two recumbent bricks and between them erect bricks, and the other group of the same height as the first group and consisting of erect bricks.

Trade-Marks Registered.

No. 148,641. Chicago Fire Brick Co., Chicago, Ills. Trade-mark registered for construction materials.

No. 150,904. LaClede-Christy Clay Products Co., St. Louis, Mo. Name "LaClede King" registered for use with fire brick and tile.

FROSTBURG ROUGH TEXTURE BRICK.

A fine bit of brick boosting literature has been issued by the Savage Mountain Fire Brick Company, Frostburg, Md. It is a beautifully printed four-page leaflet, illustrating in actual colors a panel of Frostburg Rough Texture face brick in mingled colors, in which red and dark brown shades predominate. These brick are very attractive as is evidenced by an increasing demand for them from architects and builders throughout the East and middle West. Frostburg Rough Texture brick are right in every respect and detail. They are hard, durable, impervious to water and of standard size. They are unexcelled for decorative use for either exterior or interior use, particularly for fireplaces, mantels, porches, porch columns or chimneys, and are equally well adapted for bungalows, stately mansions or sky scrapers. A copy of the leaflet may be had for the asking. Address Savage Mountain Fire Brick Company, Frostburg, Md., or their sales office, 1205 Chamber of Commerce Building, Pittsburgh, Pa. The firm has three factories, two at Frostburg and one at Potomac, W. Va.

An assay of clay from near Markham, Ore., which has been claimed to be potters' clay of good quality, has shown that the deposit is suitable only for tile and certain rougher kinds of pottery. That the deposit is of commercial value is shown by the report. The assay was made at the request of the Aberdeen (Ore.) Chamber of Commerce.

Written for THE CLAY-WORKER.

THE CHICAGO SITUATION



HERE IS MORE building, both going on and in prospect, the first few weeks of this year than there was during the corresponding weeks of last year, and from two to four times as much as there was during the like periods of 1920. When you have said that, however, you have said about the most cheerful words that are warranted by the existing conditions.

Even with the increased amount of activity, there is so much home-building needed that the work in sight will not satisfy either the tenant whose rent is being tilted again this Spring, nor the building material dealer or manufacturer, who realizes the harvest that might be reaped not only for himself, but for the whole community, if normal conditions only could be restored so that the demand might be met. It is safe to say that if the "dead hand" of labor union selfish opposition could be removed and the terms of the Landis award carried out freely and without interference, that the unemployment problem in Chicago virtually would be solved. That would mean a tremendous picking up in general business conditions—a return in good measure of real prosperity, which would be reflected through the country east of the Rockies.

Like every modern city, Chicago is bound to be in large degree a city of multiple-unit dwellings. The advantage of co-operation in sharing the necessarily high ground rentals of a congested community, construction costs and overhead expenses of heating, janitor hire and the like, compel this to be the case. Greatly increased apartment building, therefore, at prices which will yield a fair return on a basis of rentals somewhat approaching the former pre-war standards, must come, therefore, before any real dent will be made in Chicago's grossly under-built condition. At present prices demanded by most of the labor unions among the building trades an investor feels that he is taking too much of a risk and not many will put their money into the ordinary type of apartment dwelling.

The lack of needed building in the ordinary type of apartment building is responsible for a good deal of small hotel construction, as many families are being driven to single room homes because of the impossibility of securing better quarters at reasonable prices. Be that as it may, there is on the boards just now a great deal of prospective hotel construction, large, yes, very large, as well of more moderate proportions.

For example, plans are announced for the construction of the largest hotel in the world to be erected in Michigan avenue, just south of the Blackstone hotel, work on which probably will be begun July 1, if building conditions warrant, with the expectation that the structure will be completed within a year and a half. This will be a 3,000-room hostelry (800 rooms larger than the Pennsylvania hotel in New York) rising twenty-five stories and costing \$15,000,000. It will be built, owned and operated by the Hotel LaSalle Company and will be called the Hotel Stevens, after James W. Stevens, president, and Ernest J. Stevens, vice-president and manager of the Hotel LaSalle Company. Holabird and Roche, who designed the LaSalle hotel, are the architects. The main entrance will be on Michigan avenue with a 400-foot corridor running from Seventh to Eighth streets, the site being 400x174 feet. In the basement will be a huge exhibition room with 35,000 square feet of floor space, equaling, it is said, that of the Coliseum. On the roof will be an airplane landing a block in length. On the second floor, in addition to the main dining room which will seat 1,000 guests, will be the largest banquet hall in the world with a seating capacity for 1,444, the first in the north end and the latter at the south. It is likely that the bulk of the exterior will be of some specially artistic type of face brick with the best in terra cotta trim.

While not so record-breaking in importance as the pro-

posed new Hotel Stevens on the South Side, the Ben Mor, work on which will be begun on the North Side about the first of next month, will be one of Chicago's noteworthy hotels. It will cost in the neighborhood of \$4,500,000, and is expected to add to the architectural charm of the city. It will be at the northwest corner of Sheridan road and Wellington street, fronting 167 feet on the boulevard and 240 feet on Wellington street, where the main entrance will be. Simeon Swenson is the architect. The exterior will be in Venetian-Gothic of terra cotta and brick. The interior will be in Italian renaissance of varying periods.

And this is not all in the line of hotels, either. So vexed has the automobile parking question become in Chicago that Ruth and Lamb, engineers, have concluded it warrants the construction of a downtown hotel, a sort of day-nursery, as it were, for the accommodation of some of the thousands who desire to drive to town in the morning and have their cars safely kept during the day. So thoroughly are they convinced of the need of such a service that they are prepared to underwrite the investment of \$1,200,000 in the project. This building will stand in East Lake street between Michigan boulevard and Wabash avenue, with a frontage of 72 feet and a depth of 140 feet, and will be twenty-five stories in height, with a pagoda-like structure at the top which will accommodate a noon-day club. The building will be of the same kind of brick on all sides, a panel effect being obtained by inseting the brick on the east and west walls. The mechanical system which has been worked out for the housing of cars twenty-five stories above the thoroughfares for a few hours at a time is ingenious. From the time the owner steps out of his car until he calls for it again it will not be touched by human hands—unless it needs repairs. Machinery will take it to its allotted space on the proper floor, and bring it back again when called for. And this machinery will be operated by a young woman at a keyboard on the main floor and she will use only her finger tips. A man will step out of his car on driving in from the front (south) entrance in Lake street. The car will slide downgrade into the elevator. The owner will give to the keyboard operator the number of his floor and section. The girl will touch the proper button or buttons. The elevator doors close automatically holding the machine steadfast, and the elevator rises to the designated floor. There it will stop, the gates will fly open the elevator floor will tilt and the car slide forward into its allotted space. The elevator has a door also at each side so that it can discharge cars in two directions, and as the booths to hold the cars also can be moved, each elevator can unload six cars to a floor, three out of each door. At night when the owner calls for his car, the keyboard operator presses the proper button. The elevator shoots to the proper floor. The door opens. Compressed air tilts the floor of the booth toward the elevator, and the car slides down the runway into the elevator, the door of which automatically closes behind the car. At the first floor the elevator will stop; its door open and its floor tilt sliding the car, still facing north and headed for the rear entrance, through which the driver will go into Haddock place, driving around into Wabash avenue. There will be no danger of collisions because within the building the traffic will all be one way. No gas will be used to move the cars within the building, which will remove the danger of fumes of burning gas within the building. The use of elevators will obviate the old oil-soaked ramp upon which there is always some danger of a car's slipping.

In addition to having the world's greatest hotel, upper Michigan avenue also is to have the largest office building thus far erected in Chicago. It will be built by the National Life Insurance Company, and, with the exception of the site of the Quigley Memorial Seminary, is expected to cover the block included within Michigan, Chestnut, Rush and Pearson streets. It will cost \$7,000,000. It will have a 400-foot tower—the same height as that on the Wrigley building.

A new ten-story office building—the Medical Arts building, costing \$100,000, is to stand on the former site of the Noel State Bank, at the northwest corner of Milwaukee and North avenues.

SCRIP.

REVIEW OF THE PROCEEDINGS OF THE NINTH ANNUAL
CONVENTION OF THE REFRACTORIES MANU-
FACTURERS' ASSOCIATION.

DECLARING THAT the successive increases in freight rates—particularly the 40 cents per ton advance—had completely upset the 1911 differentials, the members of the Refractories Manufacturers' Association have gone on record as favoring a concerted movement which will have for its purpose the returning of all brick rates to what is commonly known as "the 1911 adjustments."

A committee, which will have the advantage of the best traffic advice it can obtain, will go to Washington within the next few weeks and will at that time present a strong plea for relief, alleging low cost of freight service, the fact that both shippers and users of fire-brick maintain private sidings, that fire-brick moves in equal volume all through the year and similar reasons why it should be given as low a rate per ton as any of the heavier building materials. At the same time, the Refractories Manufacturers' Association stands solidly on the famous "A Brick is a Brick" decision and for the preservation of the differentials which it considers as vested rights in the industry.

The action above outlined was taken at the ninth annual meeting of the Refractories Manufacturers' Association which was held at the Drake, in Chicago, March 15 and 16. At this meeting, Arthur P. Taylor of the Chas. Taylor Sons Company, Cincinnati, was elected president to succeed John D. Ramsay of St. Marys, Pa.; F. R. Valentine, of M. D. Valentine & Bros. Co., of Woodbridge, N. J., was elected vice-president to succeed John L. Green, of St. Louis, Mo., and C. E. Edmunds, of the McLain Fire Brick Company, Pittsburgh, as treasurer, to succeed himself. Frederic W. Donahoe was re-elected secretary.

Reports were presented showing that the association had grown in membership and in surplus during the fiscal year ended February 28, 1922; this is remarkable, since the past year is considered the worst in the history of the fire brick industry.

Much interest was evoked by the reports coming from the Refractories Accountants Institute, a subsidiary of the Refractories Manufacturers' Association, it being pointed out that this body, while scarcely through its first year, had come to the point where it was "sold" on the proposition that predicated costs and predicated production were within the province of the accountant.

A second subsidiary organization, to be known as the Refractories Operatives Institute, will be started in the late summer.

The President's Address.

President Ramsey, in his annual address, gave a summary of the work of the association during the past year and offered suggestions for further effort that met with hearty approval. The address was an exceptionally clever official offering. He said in part:

"It seems to me that on this, the ninth anniversary birthday of the organization of the Refractories Manufacturers' Association and the end of my second term as your presiding officer, I should briefly outline my observations during the time I have enjoyed the honored privilege of being your chief executive.

"I say 'enjoyed,' and that word does not overstate the fact, because you have made me love the work, the association and each and every member. During these two years you have broadened my vision, softened my heart, immensely increased my faith in human nature and thrilled me with the possibilities of the value of true friends. I would not part with the experience of the last two years for all the diamonds in Africa nor all of the gold in Alaska. I am truly grateful for the honor you conferred on me and I hope and pray that each succeeding year of my life may prove as happy and profitable as the two preceding years.

"I hardly need review our accomplishments during my incumbency in office because you know their merits and defects perhaps better than I, but I am sure we have gained

much and advanced steadily on the road of commercial progress.

"Our efforts in standardization, classification and research work at the Mellon Institute deal with fundamentals of a most constructive nature.

"Recognition of our activities and facilities by the various departments of the government at Washington during the last year surely justifies our existence.

"Our united efforts to reduce fire insurance rates, freight rates and to prevent the passage of unjust laws will ultimately manifest themselves in substantial relief. We have sown good seed and we shall reap a bountiful harvest.

"I hesitate to hamper my successor by offering recommendations at this time, but I cannot avoid urging the enlargement of our research work at the Mellon Institute to the full extent of our demands and the needs of the consumer.

"We should lend our full financial and moral support to the work of the Refractories Accountants Institute and we should bring into existence the Refractories Operators Institute in the immediate future.

"We should cooperate with the Bureau of Standards of the Department of Commerce to the extent of their requests. Let us offer them every facility and encouragement in their present and future efforts. The door is open and we are most welcome if our minds are as open as that door. We need them and their guidance more than they need us.

"I have on numerous occasions stated that we have an obligation to our stockholders, our employees and our customers. At our last annual meeting I urged a step which would benefit every consumer and ultimately every producer. That plan was to make a most searching industrial survey of the major operations in which our material is consumed. I will again bring to your attention this same thought with the hope that it will receive your endorsement for action at this meeting. We have frequently referred to an industrial survey, but we have never attempted a comprehensive program to obtain the desired results. It would seem to me this is the first step, and, perhaps, the most important one in benefiting the consumer, large and small, and it can be accomplished within our ranks if we will lend our support to it and contribute freely of our time and funds.

"I therefore, beg of you that we organize immediately a general committee known as 'Refractories Industrial Survey Committee' consisting of fourteen men who are able and willing to do the work.

"I cannot permit this opportunity to pass without bringing to your minds what seems to be the most impressive lesson I have learned during the last two years. I will try to visualize and crystallize this as briefly as possible for you, and that is the 'habit of making friends.'

"A habit is some unnatural custom we acquire and follow by reason of our environment; at first it is what we call an experiment but if we practice it and custom approves it, we unconsciously keep it up. So it is in our daily life. We have our daily bath, and daily exercise and a dozen other customs.

"What is true in these small habits is equally so in all things, and I hold that the habit of making and keeping friends is the grandest habit one can cultivate. I say 'cultivate' because cultivation is absolutely necessary in forming any habit and perhaps more so in the 'habit of making friends.'

"The selfish man—the man who does not exert himself to make friends and hold the ones he has—misses much of the good things in life and is out of harmony with the world. One cannot have too many friends, but many have too much money. I would rather have friends without money than money without friends. Perhaps the best way of cultivating the habit of making friends is to meet the other fellow half way all the time. Be fair, open-minded and above-board under all conditions. Don't lie, don't cheat—don't try to undermine the character or product of your competitor. Help him at every opportunity. Don't be afraid to make personal sacrifices. It may involve time, money and surely some hard work, but sacrifices for humanity are better than charity, although that covers a multitude of sins.

"Sooner or later our customers know if we tell the truth, if we are fair, honest and above-board in our dealings with the world. I sometimes feel that sooner or later they come to the point where they know us better than anyone else. And I count it of just as much value to have and to hold the esteem of our competitors as the good will of our customers.

For it matters little when we leave this earth whether we have a few more or less dollars, but it makes a lot of difference whether we have a few more or less friends. This result can be accomplished by only one method—fair play. Cultivate the habit of making friends. Make all the friends you can, but never ‘can’ one. What will it profit a man if he gains the whole world and loses all his friends? A story is told by an intimate friend of mine who is an attorney which illustrates my point.

“He was called upon to defend a colored gentleman who had been indicted for murder in the first degree. The attorney, in counselling with him before the trial, asked him if he could furnish some character witnesses. After the meaning of character witnesses was explained, he scratched his head and said, ‘Yes, sir, I can; there’s Sam Johnson of Clearfield—he could testify as to my character.’ But the attorney was amused when he found that the character witness was in the Clearfield County jail awaiting trial for manslaughter.

“I hold that business is a game. It is a lasting pleasure only if we play fair. You cannot always hold the winning hand. The other fellow must win occasionally or the game ceases to be interesting; and if you cheat you will be caught and break up the game.

“In conclusion, I thank the members of the association, the executive committee and the other officers for their loyalty and support during my administration. I shall always hold sweet memories of what you have done for me. I shall never forget your hearty handshake and your wholesome assistance at all times. I promise my successor and the association my loyalty and assistance to the extent of my ability now and for all time.

“In conclusion I quote from Robert Louis Stevenson:
 “‘So long as we love we serve;
 So long as we are loved by others I would almost say we are indispensable;
 And no man is useless while he has a friend.’”
 (Applause.)

BETTER BRICK AT LESS COST.

There is no better slogan the clayworking industry can take with it into the new season of activities than that set forth by W. D. Richardson in *The Clay-Worker* for December under the head of Association in Brick Technology. We should not only make better brick at less cost, the slogan of the industry, but we should make it the goal of active effort right along. For that way lies bigger and better times for the clayworking industry and more and better homes for the people of the country.

What is meant by less cost here is less cost obtained through improvement in the process of manufacture not merely low prices through competitive bidding for business. The purpose of business is to make a profit, and in determining the price of a product we must add up all the cost involved and to this a reasonable margin for profit. All costs went skyward during the war and the hectic period following and today there is active work all around on the task of deflation and of getting costs and prices down to a rational basis which will encourage buying and greater industrial activity. The clayworking industry has its problems here in putting forth its best efforts collectively through associations in technical research, and individually at its own plants to produce brick and other clay products at lower cost, and at the same time we should seek to improve the quality of the product.

“How,” you may ask, are we to obtain lower cost? “You may say that it is easy and well enough to talk about lower costs but it is a different thing to get them, or to point out just how they may be obtained. That is true enough but we expect to make it one of the missions of *The Clay-Worker* during this and other years to assist in every practical manner in attaining this goal of lower cost by pointing the way as it is indicated or reflected in the best thoughts of the day among the practical men of the business.

The way to better brick at lower cost is through research work, through better machines and improved mechanical methods, through better and more scientific burning methods, through more economy in the power plant and power trans-

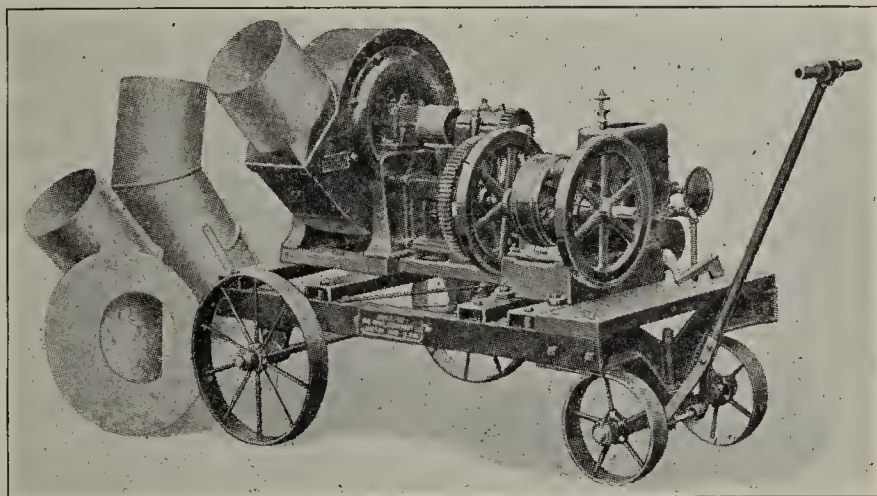
mission, through better foremanship, better system, and better business methods generally.

In all these things we have been making progress year after year, and to quite an extent this progress has been encouraged and directed by the gatherings and the activities of the National Brick Manufacturers’ Association. Thus we have brickmaking today on a higher plane than in by-gone days, which is encouraging but it does not call for a let up in our efforts. There is room for even more progress in the future than has been made in the past. So let us get busy all around and work actively toward that goal of better brick at less cost.

The attainment of this not only means a better chance for profit in the clayworking industry, but it means the use of more clay products in home building in competition with other materials, which will be good for the home builder as well as for the clayworking industry.

THE MECO KILN ACCELERATOR.

One of the modern ideas in plant operation is to accelerate the cooling of kilns. A device for that purpose is illustrated. It consists of an exhaust fan mounted on a carriage in combination with a kerosene or gasoline engine or an electric motor, to suit the power conditions of the plant where used.



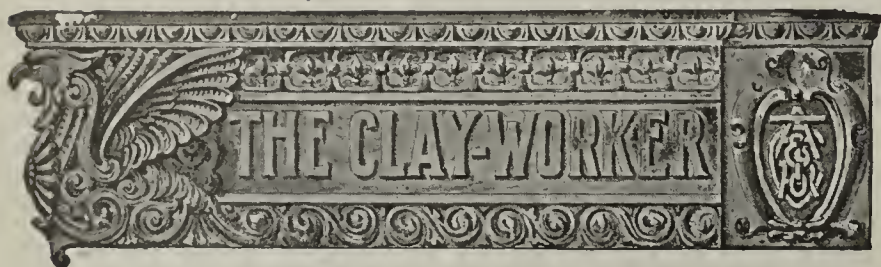
The Meco Kiln Accelerator.

In operation, when a kiln has cooled sufficiently to permit the removal of the door casing, the fan is attached and operated as a blower, thus accelerating the cooling process. When the heat of the kiln has been reduced to 500 deg. F. or less, the position of the fan can be changed, or reversed, and a suction pipe attached, drawing out the heated air, thus permitting the cooling and emptying of kilns much more rapidly than through the ordinary process of natural cooling. This device is offered to the trade by the Manufacturers’ Equipment Company, Dayton, Ohio, who will be pleased to give further particulars to any of our readers desiring same. See their ad on page 389.

A CORRECTION.

The type made Mr. Dunwody of Macon, Ga., say in the February 28th issue of *The Clay-Worker*, in referring to his kiln equipment, “We are using the Miller system in batteries of nine.” What he really said was, “We are using the Minter system.” The familiar expression, “What’s in a name?” can be answered in this instance that it means a great deal, for the Minter system of burning brick has demonstrated that it is very efficient. The home office of the Minter System is with the Flint River Brick Company, Albany, Ga.

Well directed industrial co-operation is just as essential to the waging of a successful war as well trained soldiers, so let us have peace and co-operation between labor and capital and not antagonism and jockeying for profits.



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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

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CURRENT COMMENT.

It's a good time to fish—for new ideas.

* * *

It is better to aim high and fall short than to not aim at all.

* * *

Now we are beginning to interpret salesmanship into terms of real service.

* * *

One good way to help business is to be a booster in your own home town.

* * *

It seems perfectly appropriate to class a good Ford story as a rattling good story.

* * *

The hope of being an owner tomorrow keeps many a workman from getting discouraged today.

* * *

The first business of the brick plant is to make brick. The next is to make good brick, and then better brick.

* * *

If you are a brick man, boost brick, but don't knock hollow building tile. The same goes in reverse if you are a tile man.

* * *

The science of cost accounting seems now to have reached the point where an expert can make your cost figures show anything he wants them to show.

* * *

If that string of brokerage failures in New York has the effect of curing some of the fever for speculation it will prove good for the business and finance of the country.

* * *

The fact that there is some promise of cheaper coal this summer should not cause any let up in efforts at fuel economy,

because the fuel item always amounts to enough to be an important factor in cost.

* * *

The time when a man's conscience hurts him most for telling a lie is when he gets found out.

* * *

Figures are useful in keeping us informed of results, but after all it is work that produces the results.

* * *

It is better to waste some money on new equipment than to waste a lot of good time on old equipment.

* * *

Old Hard Times has done more to encourage thrift and cost cutting than all the preachings of the past year.

* * *

Thrift and economy are good things, but a better thing is that of applying energy which furnishes you something to be thrifty about and to economize with.

* * *

The hollow building tile folks have a splendid organization, but now and then it looks like they need a little better personal co-operation between neighboring members.

* * *

If, as is intimated, the majority of people who go on strikes in this country cannot speak or understand the English language, it is time to forcibly impress them that striking is not good Americanism.

* * *

Forbes says he has been traveling quite a little ways from the Wall Street canyons and has been impressed with the sensible attitude of nearly all those he talked with. He can get that sensible attitude impression any day by getting away from Wall Street and getting among real people.

THE BUILDING OUTLOOK.

Present reports from those who have made a survey of the building situation indicate that the building throughout the country for 1922 will on the whole be 50 per cent ahead of 1921. This makes an encouraging outlook and speaks well for busy times in brick, hollow building tile, sewer pipe and flue lining. The indications are from reliable sources, too, that from 45 to 50 per cent of the total building will be home building, which will be an even better showing than was made last year. In short, it looks like another year in which home building will be a big feature. Industrial and investment building is a little slow because it is claimed wages have not yet been deflated enough. So if there is a readjustment downward of wages in building industries without a lot of strikes, there should be conditions that will encourage investment and business buildings, which will add materially to the total of building projects for the year. Even as it stands now, however, the outlook on the whole is good. Some sections may seem slow, but others make up for these with a total showing which indicates it will be 50 per cent better than 1921.

HOME FINANCING.

Home financing is a problem of national scope that is getting lively attention these days. The need for homes supports the plea that home building money should come first. And since financing is the greatest problem in connection with home building, it is right and proper that this should have attention, both in a big broad way and by local co-operation among those interested in the construction business. There are national aspects, but in the main, aside from the question of taxation and developing sources of money supplies, the problem is a local one to each community. Home financing, like charity, begins in your home community but should ex-

tend and have a hook up and co-ordination throughout the country, and this helps to make it really a national affair. And the matter of home financing is one which every man making structural material or dealing in it or who is engaged in structural work should manifest a keen interest in that we may find the solution and speed up home building during the year.

HOW MUCH FOR THE HOME?

When a man starts out to plan and build a home there enters a question of how much he should invest in that home. Here we find a relation between annual income and home, and this leads to a study of how the average man divides his income to provide food, raiment, shelter and all the many items which go to make up the needs and desires of humanity. Allen E. Beals has figured it out that a man should invest 20 per cent of his income in the building of a home, and figure on paying for it on this basis in about ten years. The way he figures it out it indicates that a man should invest \$2,000 in a lot and home for each thousand per year of income. That means that a man with an income of \$2,000 a year can build a home costing \$4,000 for lot and house and pay for it in ten years with 20 per cent of his income, and that a man with \$2,500 a year should build a \$5,000 home, and so on. Whether this is correct or whether it will fit all cases remains to be seen. It does one good thing, it gives a sort of standard basis to work from in figuring with and talking to people who are planning to build homes. And one thing to keep in mind is that if they build a home of permanent fire proof material it will be a good home long after the ten year period of payment has passed, therefore they can afford to invest more in the original construction.

FLIVVER METHODS IN HOME BUILDING.

According to one of the reports of the Dow Service in New York, some of the lumber folks are planning to do home building on a sort of quantity production basis, comparable with methods used by the Ford Motor Works for assembling a flivver. The idea is to standardize a given type of 6-room home, have all the different parts cut and machined to size, then assembled by different crews. One doing the framing, one the wall work, and so on. The idea back of it all is to lower cost, economy in lumber construction which will make for cheaper homes and more business for the lumber folks.

It is not a new idea, nor is the idea of standardization entirely confined to the lumber material division. There have been big concerns exploiting ready cut homes by mail for some time. In fact the ready-cut house is the original standardized house, and while during the war period and since, to supply certain industrial requirements, there have been considerable exploitation of these, they have not entered very extensively for home building by individuals.

It is probable that new encouragement has been given all this by the efforts of Secretary Hoover to standardize doors, windows and the trim of houses so as to reduce production costs of these items and thus help lower cost of building operations. Mr. Hoover is doing splendid work in this line and also with architects in the matter of simplifying and standardizing floor plans, room sizes and so on. This work, however, will help in the building of brick and hollow tile homes as well as in the building of wooden homes. It simply means the elimination of a lot of useless variety and the general following of simplified or standardized plans that will make for lower costs in building operations. This idea is good. Those who let it run away with them, however, and

undertake flivver construction tactics in home building may make a go of it in some of the large centers, but to the country as a whole this idea will not make much of an appeal.

OPEN PRICE REPORTING.

What is known as the hardwood case furnishes a keynote to the situation among commercial organizations which gather and distribute statistical information including prices on sales that have been made.

The American Hardwood Manufacturers' Association, which was enjoined from open price reporting by the courts, held a meeting in Louisville recently and voted to incorporate the American Hardwood Institute, with a capital stock of \$100,000, to take over this statistical work and other activities formerly carried on by the association.

The point of interest in all this to other commercial associations is in the plans outlined and in the realization which was voiced at a gathering that statistical information is vital to the welfare of industry. For compliance with the law the plan is to furnish statistical information of production, stock on hand, and current prices, in published form, which will be made available to the government and offered on a subscription basis to the public at the same time it is furnished to members. This, it is thought from the correspondence between Secretary Hoover and Attorney General Daugherty will furnish compliance with the law.

The changing from a loose voluntary association to a specific incorporation does not give an organization any more right to do things that would be illegal for an association. It is opined, however, that it does put the matter in a better business shape and on a more definite basis.

SALES SERVICE.

We have had quite a lot to say in these columns from time to time about the importance of getting and maintaining a local dealer hook up for the distribution of brick, hollow building tile, drain tile, sewer pipe, flue linings and so on. Next it is in order to follow this with another idea, that of sales service in connection with the local dealer. Other producers selling their products through these same dealers are furnishing an example of sales service that the clayworking industry may well follow.

The plan of the sales service is for the traveling salesmen of the producer calling on local retail dealers to co-operate with them in two ways. For example, a salesman handling prepared roofing will ask the dealer to make him up a list of prospective customers in his community. These will be sent in to the home office and literature and letters mailed to them, and inquiries of course will be referred back to the dealer. Then periodically the salesman will come and spend some time with the local dealer, going out with him to visit prospects and help push sales. This is one reason why the roofing people have made great progress during the past few years.

Not only may the brick and hollow building tile people take on this kind of sales service idea to advantage, but there seems in it a special opportunity for drain tile exploitation. This often involves rounding up a number of prospects in a community so as to get carload quantities. The sales service plan of the prepared roofing people should furnish an excellent idea to follow in developing drain tile business.

We are developing more aggressive ideas of real service in our salesmanship all around now, and it is not enough for the clay manufacturer to pick out a local dealer and ask him to represent them in his community. He should follow it up with an active sales service which means something in itself and which will help stimulate the local retailer to more live efforts on his own part.

ALBERT POTTS BACK IN BRICK MACHINERY GAME.

The Lancaster Iron Works, Incorporated, Lancaster, Pa., writes that Mr. Albert Potts, of Indianapolis, who for a number of years was associated with the well-known soft mud machinery firm of Potts & Co., has recently joined their sales force. Mr. Potts has a wide personal acquaintance among the brickmakers of the country, and his knowledge of brickmaking machinery will make him a very welcome visitor in the middle West, which is to be his field of operation.

AN EXPLANATION.

Dr. G. C. Mars, Manager of the Department of Service of the American Face Brick Association, calls our attention to the fact that our illustrations in his most interesting article in the January issue of *The Clay-Worker*, entitled "Build in Brick," which had previously appeared in "Country Life," was objectionable from his viewpoint because they bore the name of the make of brick used. The cuts in *The Clay-Worker* were not the same as were used in "Country Life," but were views of beautiful brick homes here in Indianapolis. Naturally we took pride in the latter fact, and, as is our custom, gave the name of the brick used. It is all right for us to do this, but not for Dr. Mars, who represents various face brick, and naturally avoids any seeming partiality, hence this explanation.

CHICAGO ENGINEER "AD" MEN ELECT OFFICERS.

Julius Holl, advertising manager of the Link-Belt Company, Chicago, for the last ten years, has been elected president of the Engineering Advertisers' Association. Mr. Holl was head of the publication section of the emergency fleet corporation during the war. Later he was made assistant to Charles Piez, director-general of the corporation.

Other officers elected were:

J. B. Patterson, district manager of P. H. & F. M. Roots Company, vice-president.

H. N. Baum, manager of Celite Products Company, secretary.

C. H. Connell, advertising manager of the Weller Manufacturing Company, treasurer.

Extensive plans are being formulated by the association for its participation in the convention of the Associated Advertising Clubs of the World, to be held in Milwaukee in June.

ROESSLER-HASSLACHER COMPANY AMERICAN OWNED.

Under the above caption the East Liverpool Review publishes some interesting correspondence by which is made known the fact that the Roessler-Hasslacher Chemical Company, New York City, is an American corporation and not German-owned, as has been stated by some of their competitors. The Roessler-Hasslacher company is one of the largest and best known firms in America manufacturing and dealing in chemicals and refined materials used in the production of pottery and other ceramic wares. They have extensive plants at Perth Amboy, N. J., St. Albans, W. Va., Niagara Falls, N. Y., and Los Angeles, Calif., with branches in most of the leading cities of the country. They are thoroughly American in every way, especially in the spirit of enterprise, which has enabled them to take a leading place in their chosen field of endeavor. See ad. on page 397 of this issue.

One of the common bad habits which we should seek to abolish is that of referring to the technical and detailed

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knowledge of the craft as "tricks of the trade." The expression is too suggestive of trickiness, a thing which should have no part in the clayworking industry.

Wants Address of Good Kiln Builder.

Editor *The Clay-Worker*:

Would you kindly give me the names of some good kiln builders? I want a kiln suitable for a yard making about 6,000,000 common building brick. The demand, of course, is better for our hard-burned brick, and we ship about half by railroad and the rest by truck.

Yours very truly,

WELLINGTON BLUNT.

Ashland, Va.

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher,

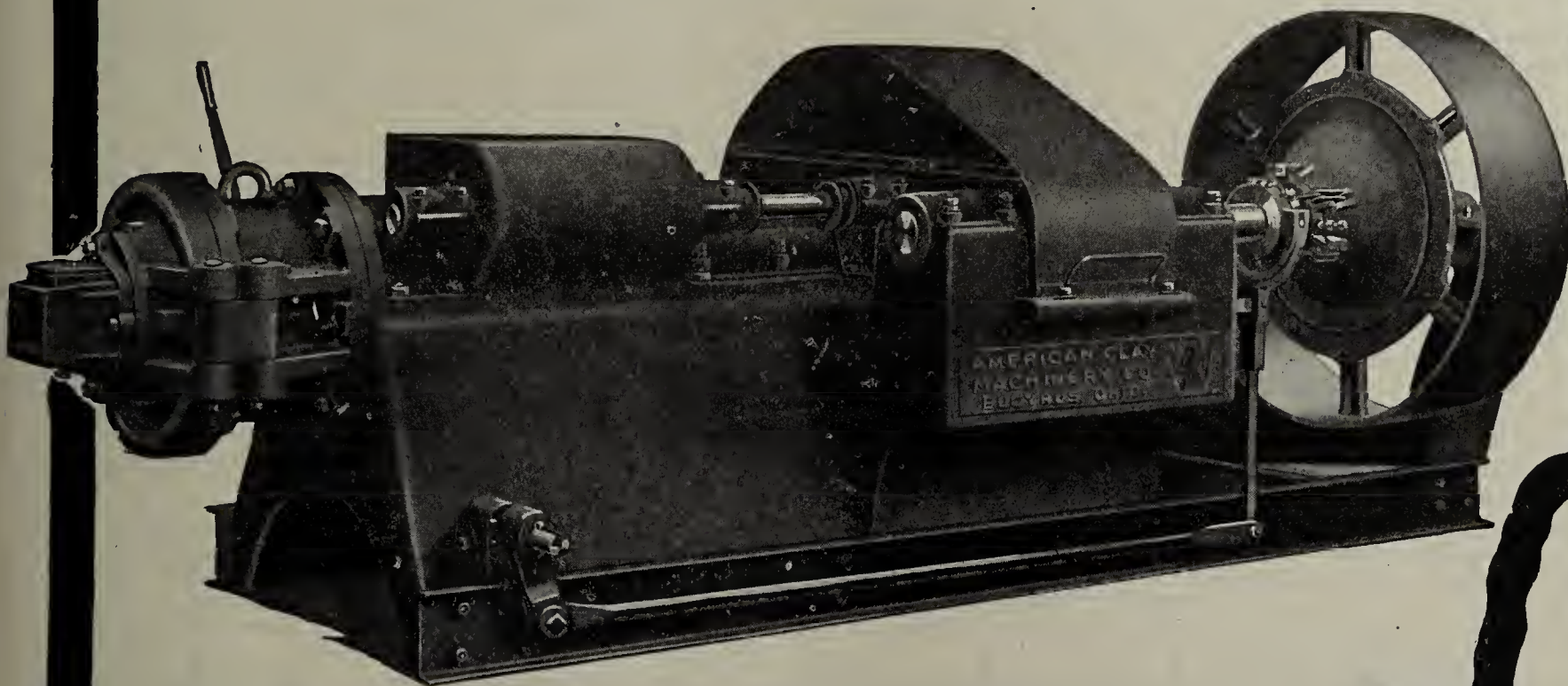
412 No. Walnut Street,
Bloomington, Ind.

BY THEIR DEEDS YE SHALL KNOW THEM!!

OHIO, Too

From Lake to river,
State to State,
They say the 290
Is great.

And the American 290 is well liked in Ohio, too. Because it produces the goods with a minimum of trouble and expense. Not just a user here and there, but Many.



Ohio is the home of the American No. 290 Auger machine and it is making the "Home Folks" prosper. It prospers the users in other states, too. You will find 'em in most states—all states where there is clay.

Look at these leading Clay Workers of Ohio who have made the 290 a "Pace Maker" in their plants.

Send for a list in YOUR state.

"You see them wherever you go
and—They go wherever
you see them"

They Have 'Em

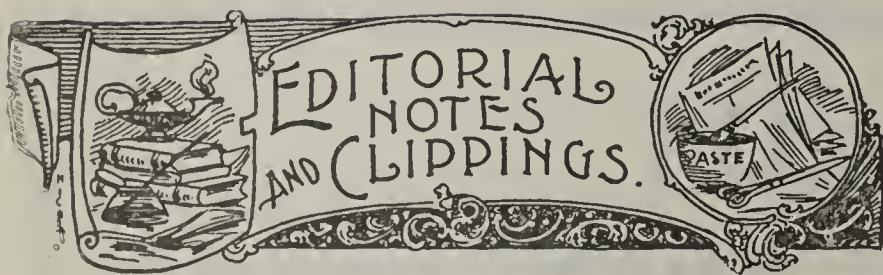
CANTON CLAY PRODUCTS COMPANY.....
..... Robertsville, Ohio
CLAY CRAFT MINING AND BRICK COMPANY
..... Shawnee, Ohio
BANFIELD CLAY COMPANY..... Irondale, Ohio
ALLIANCE BRICK COMPANY.... Alliance, Ohio

They Have 'Em

WHITACRE GREER FIREPROOFING COM-
PANY Waynesburg, Ohio
INDEPENDENT BRICK AND TILE COMPANY.
..... Cleveland, Ohio
CONTINENTAL CLAY COMPANY.....
..... Salineville, Ohio
CONTINENTAL CLAY COMPANY.. Canton, Ohio

THE HADFIELD-PENFIELD STEEL CO. BUCYRUS, OHIO

Formerly THE AMERICAN CLAY MACHINERY CO.



The McArthur (Ohio) Brick Company, following a long shut down, started operations March 6.

The Bellevue Clay Products Company, of Bellevue, Iowa, has been organized with \$250,000 capital stock.

The Herbert-Fischer Brick Company, Memphis, Tenn., is making extensive additions to its plant located in New South Memphis.

The Chatfield (Ohio) Brick & Tile Co. is the new name of the firm formerly operating under the name of the Baumgartner Bros. Co.

The Boone Brick, Tile & Paving Co. resumed operations at its plant at Boone, Iowa, March 13. The plant had been idle for a number of months.

William J. Goodwin, president of the Goodwin Tile & Brick Co., Des Moines, Iowa, has announced his candidacy for nomination for State Senator.

F. A. Crockett has sold his brick plant at East Dover, Maine, to A. O. Robbins, who is acting for a number of interested men. The plant will be put in full operation in the spring.

Greenville, Tenn., is to have a new brickmaking plant. Suitable shale has been located on the farm of L. B. Britton and the project is being backed by representative men of Greenville.

G. W. Starr, of Powers, Coos County, Oregon, writes that he is going to start in the brick, tile and pottery business in the very near future and would like to receive catalogues of machinery and equipment.

The Standard Brick Company, of Crawfordsville, Ind., recently booked an order for 1,000,000 paving brick, and this, together with another large order for 2,500,000 building brick, insures a busy plant for some little time.

At the first monthly get-together meeting of the Columbus Clay club, Columbus Ohio, 30 members were guests of the Gaddis-Harrison Brick Company at the company's display rooms in the Gaddis-Harrison building. Galen Starr Ross was the principal speaker, dinner was served and the guests were entertained with a musical program. Members of the club, who are all connected with the brick industry, surprised

their hosts by presenting to them a beautifully engraved chime clock.

The Palmer Press Brick Works, of Palmer, Texas, has been incorporated with \$21,000 capital stock.

The Duffney Brick Company, of Mechanicsville, N. Y., has increased its capital stock from \$100,000 to \$110,000.

Louis Nicholas and Charles Weinz and Adam and Louis Baab, of Dover, Ohio, contemplate the erection of an immense brick and fireproofing plant at that place.

The Oregon Face Brick Company, with headquarters at Willamina, Ore., has been incorporated by Andrew Kershaw, Robert Shelley and Harry Kershaw. The capital stock is \$150,000.

The American Shale Brick Company, of Martinsburg, W. Va., has been incorporated with \$100,000 capital stock. F. Vernon Aler and Henry J. Little, of Martinsburg and others are incorporators.

Alhorn & Walker Co., an old established firm manufacturing brick at Morganfield, Ky., has recently been incorporated with \$40,000 capital stock, by Fred Alhorn, Senior, Fred W. Alhorn and M. M. Walker.

A. P. Hillenbrand, of the Progress Press Brick & Coal Co., Louisville, is quite optimistic over the outlook for the coming season. Mr. Hillenbrand rather looks for a slight reduction in prices in the building line.

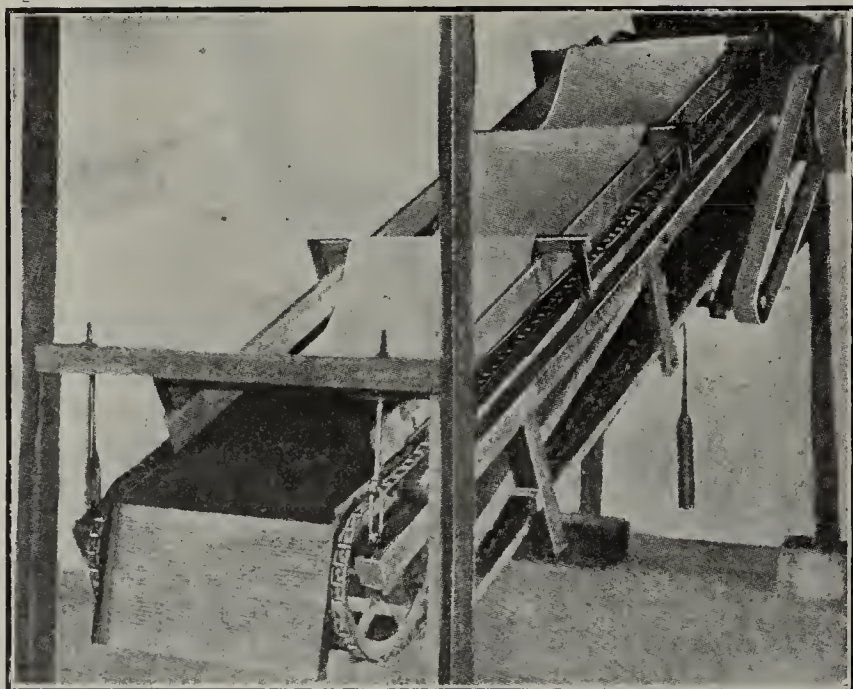
The Henry R. Fell Company, East Carroll street, Trenton, N. J., manufacturer of roofing tile, will build an addition to double approximately the present capacity. New mixing, pressing and other machinery will be installed.

The Steiger-Vallejo Brick Company has incorporated at Vallejo, Calif., with \$500,000 capital stock. Alber Casper is president, W. J. Tormey, vice-president and treasurer, and A. H. Wehle, secretary, and L. A. Steiger, general manager.

The Kentucky Refractories Company will erect a plant at Russell, Ky., where they will manufacture brick and tile. The construction of the plant will be under the supervision of Ralph P. Hipp, vice-president and general manager of the company.

The Huron Clay Products Company has been putting the plant at Crosswell, Mich., in shape for steady operations as soon as weather permits. They now have a number of orders for both brick and drain tile on hand and the prospect for business is very promising.

Louis C. Rivas, for a number of years associated with Hull & Rivas, Jacksonville, Fla., has resigned and will engage in the manufacture of brick and tile on his own account, under the firm name of Louis C. Rivas Company. Robiou Bisbee will have charge of the office end of the business.



PERFECT CLAY SCREEN

25 Years Daily Service

And still at it, are the records of many PERFECT CLAY SCREENS, producing a satisfactory product which insures better and more uniform drying, burning, with greater per cent of high grade finished product. SAVES FUEL and LABOR, and is positively the only SCREEN ADJUSTABLE TO THE VARIATIONS OF CLAY FROM DAY TO DAY. NO VIBRATIONS. NO NOISE. FIRST COST AND UPKEEP VERY LOW and every Screen absolutely guaranteed satisfactory.

Write and ask how much saving we can promise you.

DUNLAP MANUFACTURING CO.

Bloomington, Ill.

Sydney Higgins, William Higgins & Son, Cheatham, Manchester, England, in a recent letter says they are very well pleased with the hollow tile machine purchased from the Fate-Root-Heath Company, of Plymouth, Ohio. To quote Mr. Higgins, "The cutting of the Rotary Benson cutting table has been an absolute Godsend to us."

The Russell Clay Manufacturing Company recently incorporated under the laws of Delaware, has its new plant at Alton, Ala., nearly ready for operation. They will make vitrified paving brick at the rate of 50,000 per day. L. S. Russell, H. N. K. Jefferson, M. M. Baldwin and F. D. Powell, of Birmingham, Ala., constitute the board of directors of the company.

The Queens Run Fire Brick Company, Lock Haven, Pa., has taken over the North Branch Fire Brick Company and the West Branch Fire Brick Company, both operating plants in that section, and will consolidate the companies under its present name. A number of improvements will be made. William Sleicher is president and George H. Diack, general manager.

Work on the new plant of the Paloma Brick & Tile Co., at Wilson, La., is being pushed as fast as possible, and it is hoped to have the plant ready for operation by early summer. They will make hollow tile, face and paving brick. Dr. T. A. Mills is president; W. H. Dalrymple, vice-president, and W. P. Dinkins, secretary-treasurer of the company, which is capitalized at \$100,000. The company owns a large tract of shale land which insures raw product for their output for many years to come.

At the recent annual meeting of the stockholders of the Idaho Fire Brick Co., Troy, Idaho, reports showed the company in very good condition, with about 50 per cent more business for 1921 than the average of the four preceding years, with good prospects for the coming season. The following officers were elected: President, C. V. Johnson; vice-president, G. C. Hoyt; J. B. Watson, general manager, secretary and treasurer. The foregoing gentlemen, together with

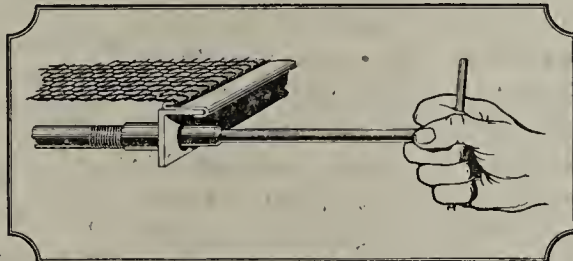
W. M. Duthie, Charles Amos and G. M. Saad, constitute the board of directors.

The plant of the Murphysboro Paving Brick Company, at Murphysboro, Ill., which has been undergoing a complete overhauling, under the supervision of Marion W. Blair, plant manager, resumed operations March 9. The company employs 135 men and recently reached a wage agreement for 1922 and 1923.

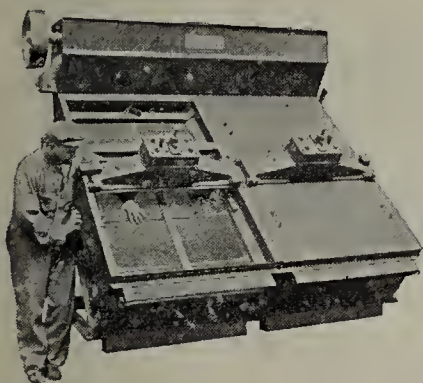
Officers of the Idaho Clays, incorporated, Coeur d'Alene, Idaho, have announced their plans for erection of a factory there at an estimated cost of \$500,000. The main building of the proposed factory will be 700 feet long and 12 feet wide. Several other large buildings are also to be built, including machinery room, sheds and warehouses and a large power plant. Steam power will be used and, it is said that twelve 36-foot down-draft kilns will be put in. About 100 men will be employed at the plant the year around.

The Western Brick Company, Danville, Ill., held a little convention of its own Saturday, February 19, when some seventy brick manufacturers, dealers and salesmen, the latter associated with the company, gathered at Danville as guests of the company. The morning was devoted to a trip through the plant and an informal luncheon was served at one o'clock. This is an annual affair with the Western Brick Company and each one seems just a little more successful than any that have gone before, and is no doubt one of the elements of success which this concern enjoys.

The American Encaustic Tiling Company, Zanesville, Ohio, already operating two tunnel kilns, recently contracted with C. B. Harrop, consulting engineer of Columbus, Ohio, for a 330-foot Harrop continuous tunnel kiln for burning their bisque floor and wall tile. The kiln is designed for the firing of natural gas, fuel oil and coal on mechanical stokers and is to have a capacity equivalent to the burning off of eleven sixteen-foot diameter periodic kilns per week. Construction work on the kiln will be started as soon as the plan can be prepared.



No user would go back to old method!



Operator turning key to bring HUM-MER screening surfaces to "drumhead" tension.

No one thing has done more to make wire cloth screen faster and wear longer than the HUM-MER method of hooking the cloth on an expansible frame and bringing it to "drumhead" tension.

The ends of every cross wire are turned over and firmly clamped into a patent edge or "hook strip" which hooks over the screen frame.

When the screen frame is expanded by turning the key, each individual wire is stretched taut and vibrated from end to end.

This uniform tension produces a

smooth, even surface. There are no ridges or high spots to receive an undue amount of wear, which would make it useless long before the other portion of the screen shows any wear.

With the HUM-MER method of hooking the screen cloth in place, one man can replace the screen cloth on the expansible frame and bring it to "drumhead" tension in a few minutes.

No user would go back to the old method of applying cloths to frames by means of rivets, nails or bolts.

Send for Catalogue 42-W

THE W. S. TYLER COMPANY, Cleveland, Ohio

Manufacturers of Woven Wire Screens and Screening Equipment

CONVENTION WISCONSIN CLAY MANUFACTURERS' ASSOCIATION.

(Continued from page 353)

The oil supply pipe lines should have as few turns in them as possible, and should be buried in the ground with risers for a portable line at each kiln.

The amount of oil required to burn a thousand brick varies so much that I cannot give any satisfactory answer. In some localities eight gallons per thousand; in others, as high as fifty. It depends on the clay, the process by which the brick are made, the kilns, and the intelligence of the operator regarding the handling of oil.

In Chicago in common up-draft scove kilns, they burn a thousand brick with from eight to fifteen gallons of oil, and their temperature by pyrometer charts up as high as 2,000°. I was interested in a yard at Grand Rapids, Michigan, where we had a close, fine grained silica clay, and it took thirty gallons of oil to the thousand brick. Last year we made an installation of burners similar to those used in Chicago at Mechanicville, New York, and they are burning with about twenty-five gallons of oil to the thousand brick.

So you will see there is a saving in fuel value alone, but the great saving in the use of oil comes in the saving of labor, both in handling the coal and removing ashes.

In shortening the time of burning by having positive and uniform control of the fire, and no smoke.

Saving of brick in the arches, as the air supply is regulated, and there is no inrush of cold air into the kiln, the same as when using coal or wood. This causes the breakage.

I understand that on the Burnham Brick Yard in Milwaukee, they are using oil very successfully similar to the Chicago process. I know for years it was claimed that Milwaukee clay could not be burned with oil. (Applause.)

Samuel Gunther, Port Washington manufacturer, told of competition of "Clay vs. Concrete Drain Tile," in which he referred to the numerous plants which had sprung up in recent years, manufacturing a concrete product as a substitute for the clay drain tile. Although competition has been keen, he stated that the best argument against concrete drain tile had been the unfortunate experience of the farmer and others who have tried out concrete tile. In most instances there has been replacement after a short time of the concrete tile with the clay drain tile and this has had the effect of boosting the clay product without much effort on the part of the clay manufacturers. Instances were cited where concrete tile had been used without giving satisfaction. It was pointed out that a satisfactory concrete product could not be produced to compete in price with the clay product, and that the failure of concrete pipe had been largely due to a cheap product made

to compete on a price basis. As a result the public, after its sad experience, has learned its lesson and the clay drain tile is again coming into universal use. Mr. Gunther cited a case where a farmer had come twelve miles to his plant and hauled clay drain tile back to the farm, although a concrete tile factory was situated only a mile from that farm. This farmer had learned from the experience of others.

While a decision has not been made by the Wisconsin Railroad Commission on the hearings held at which the Wisconsin Clay Manufacturers' Association had argued for a reduction of freight rates on brick, the report of the committee was received with great interest. It is the aim of the Wisconsin manufacturers to place brick freight rates on the same level of increase with other commodities, so that when a percentage decrease is put into effect brick rates will be on a proper basis. In 1918 the class rates were increased in addition to the general increases of other commodities. Thus a general reduction would not bring back on the same level with other products, unless an adjustment is now made. The report of the committee was one of the most important subjects presented and a copy of the report follows:

Report of Committee on Freight Rates.

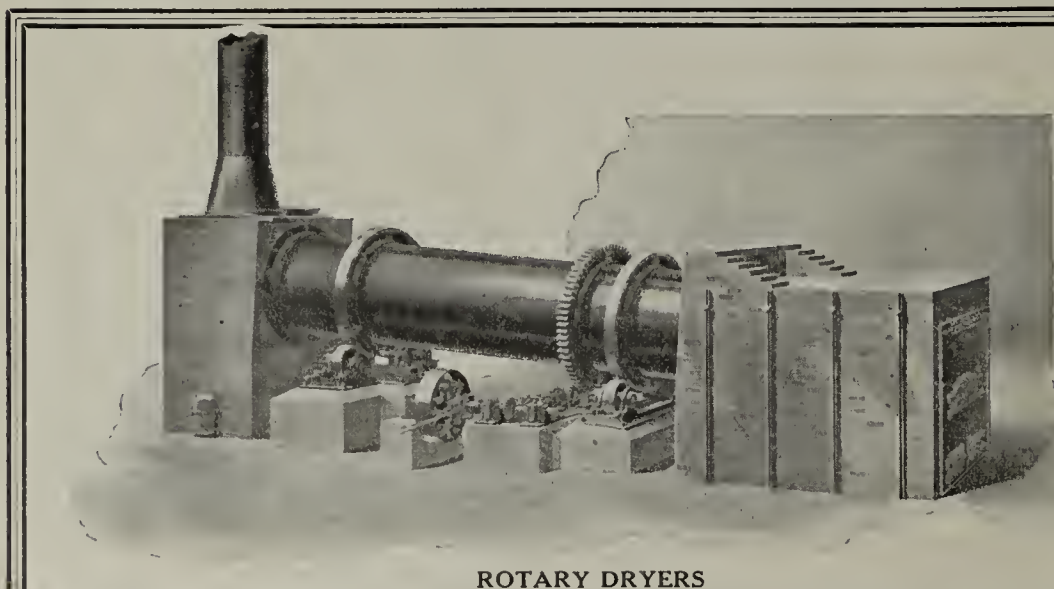
To the Members of the Wisconsin Clay Manufacturers' Association:

In endeavoring to comply with a request for a statement relative to the freight rate for the transportation of clay products in Wisconsin, it is not deemed necessary to refer to conditions prior to August, 1911, pursuant to which the Wisconsin distance rate was established on both brick and tile, which proved satisfactory and remained in force until June 25, 1918.

On that date the Director General of railroads made an order increasing all class rates 25 per cent and less, and all specific or commodity rates were so increased not exceeding 25 per cent except the rate on stone, sand and gravel, cement, plaster and brick. The rate on brick was increased 2 cents per 100 lbs., increasing that rate 50 to 100 per cent, or over 66 per cent on the average Wisconsin haul.

The rate so fixed by the Director General remained in force until August 26, 1920, when another increase was added of 35 per cent based upon the then existing rate. This association through its committee protested the 2 cent per 100 lbs. increase and also the 35 per cent increase because it included the excessive increase by the Director General. No consideration was given these protests, so far as this committee is informed.

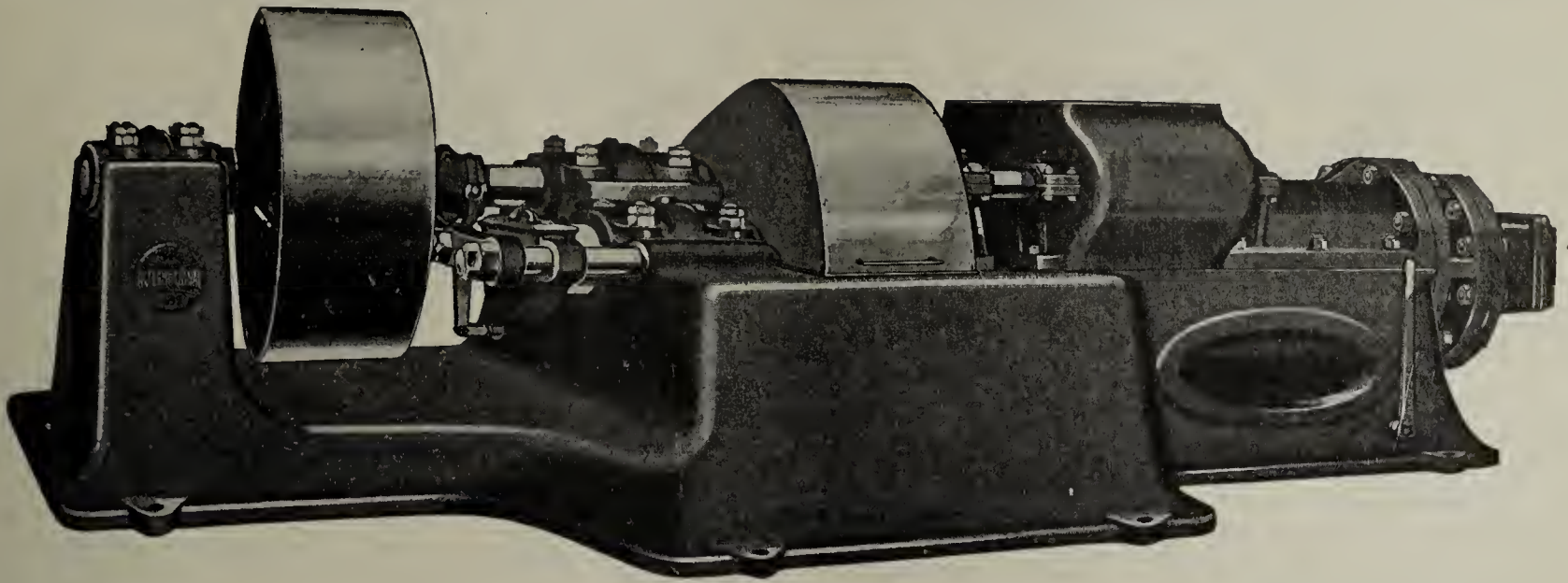
(Continued on page 386)



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO



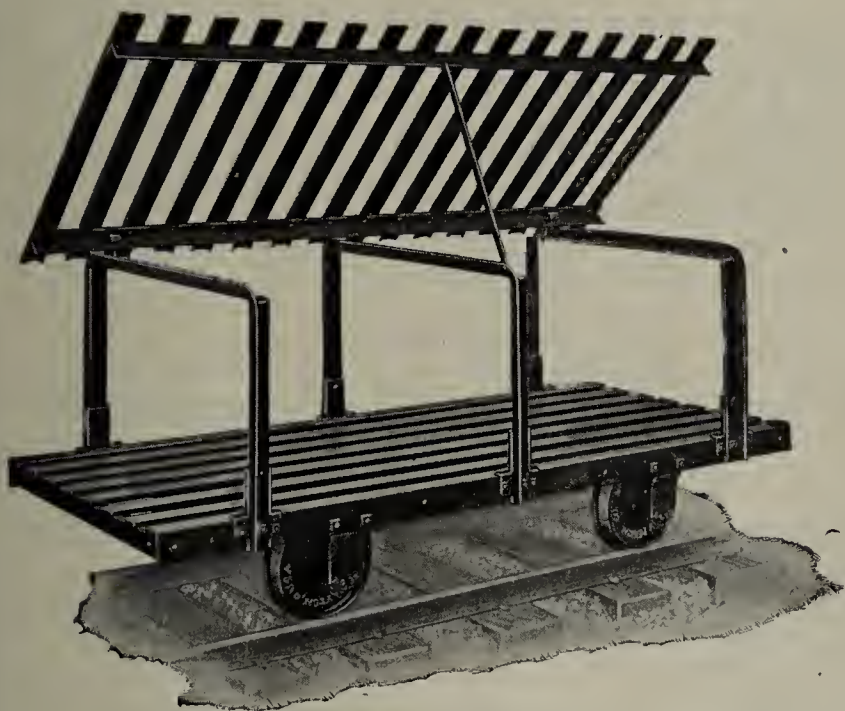
Type 445—25M to 40M Brick per day

Type 435—40M to 75M Brick per day

Type 425—75M Brick per day upward

Or the Equivalent in Hollow-ware.

**THREE MACHINES OF ADVANCED DESIGN
TWO MAIN CASTINGS, SHAFTS AND GEARS**



Type G

**Dryer Cars
and
Industrial Cars
of all types**

**A Complete Line of
Machinery and Equipment
for the Clay Plant**

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

CONVENTION WISCONSIN CLAY MANUFACTURERS' ASSOCIATION.

(Continued from page 384)

The rates for shipment of brick, in Wisconsin within the 200-mile distance now is, per 100 lbs.:

	Single line	Two lines
For distance not over 15 miles.....	5½	7
Over 15.4 miles and not over 30.4.....	6	7½
Over 30.4 miles and not over 45.4.....	7	8
Over 45.4 miles and not over 50.4.....	7	9
Over 50.4 miles and not over 65.4.....	7½	9
Over 65.4 miles and not over 80.4.....	8	9½
Over 80.4 miles and not over 110.4.....	9	10
Over 110.4 miles and not over 160.4.....	9½	11
Over 160.4 miles and not over 200.4.....	10	11½

This being an increase on brick, on the average Wisconsin haul, over the Wisconsin rate of 1911 of over 127 per cent, instead of the 25 and 35 per cent on other commodities. There has been pending before the Interstate Commerce Commission for some time a petition for reduction of freight rates on brick. From the arguments which have come to our notice we assume that it is the principal aim to secure a general reduction in percentage, one which would not remedy the excess increase on short haul which most seriously affects Wisconsin manufacturers and consumers.

We also assume the principal difficulty in arriving at a decision is that many other states have a conglomeration of class, commodity and special rates and that the 2-cent increase does not affect the long distance haul as it does the short haul.

At the last previous meeting of this Association the following resolution was adopted:

"Resolved, That the Committee on Railroad Rates is hereby authorized and directed to take such action on behalf of the

members of this Association as may be deemed necessary, to procure such rates on shipment of clay products in Wisconsin as will be fair and equitable, as compared with the rates on other commodities, in accordance with the principles upon which is based the decision of the R. R. Commission of Wisconsin of August 15, 1911."

Your committee understands that the inequality referred to related to brick only, and not to tile. And in view of the general agitation for a reduction of railroad rates, it was our principal aim to endeavor to procure a decision placing brick rates in Wisconsin on a basis of equality with that on other commodities. Your committee has been in doubt as to the authority of the Wisconsin Commission in the matter, but having ascertained that jurisdiction was accepted in the sand and gravel case and others, and decisions rendered, deemed it advisable to file a complaint with the commission, asking a reduction of the excess rates on brick, caused by the 2 cents per 100 lbs. increase. Your committee employed Mr. A. E. Solie, Traffic Manager of the Central Wisconsin Traffic Bureau, to file the complaint with the Wisconsin Commission, and to compile the evidence in verification of the cause of action and to present the case at the hearings.

The complaint was served upon eleven railroad corporations of Wisconsin and a hearing was had at Madison on December 22, 1921, attended by your committee and Mr. Solie. An adjournment of the case was granted, to give the attorneys for the railroads time to produce evidence on their part, until January 25, 1922. This hearing was attended by Mr. Solie. It is expected that a decision will be rendered in a short time, and our attorney is confident of a favorable decision.

The expenses of the case, aside from the expenses of the members of the committee, viz: \$250.00, were advanced by the Ringle Brick Company, Wausau, Zerrenner Bros., New London Excelsior Brick Company and Hydraulic Brick Company, Menomonie. The case as presented, asks for a reduction of brick rates in Wisconsin, to a basis of 25 per cent increase instead of 2 cents increase as of June, 1918, with the added 35 per cent increase of August 26, 1920, as these increases apply to other commodities, and that the rates be fixed on a 5-mile distance as per annexed schedule of single line shipments.

It will be seen by comparison that the proposed rates provide for an average reduction of about 2 cents per 100 lbs. on the short haul, leaving the rate according to the original Wisconsin schedule with the percentage increase, as the same applies to other commodities.

Respectfully submitted by the Committee.

JOHN RINGLE,
OSCAR ZIMBALL,
OSCAR WILSON.

CENTRAL WISCONSIN TRAFFIC ASSOCIATION.

Wausau, Wis., Dec. 3, 1921.

Memorandum showing the present and proposed rates on brick for movement over a single line, and amount of reduction if proposed rates are established:

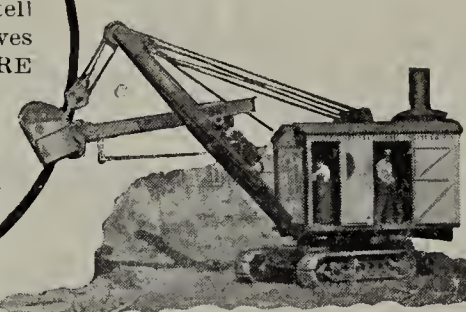
Distance Miles	RATES:		
	Present	Proposed	Reduction
10	5.5	3.05	2.45
15	5.5	3.25	2.25
20	6	3.50	2.50
25	6	3.70	2.30
30	6	3.95	2.05
35	7	4.20	2.80
40	7	4.40	2.60
45	7	4.65	2.35
50	7	4.85	2.15
55	7.5	5.10	2.40
60	7.5	5.30	2.20
65	7.5	5.55	1.95
70	8	5.75	2.25

(Continued on page 388)

WHY

will most experienced Brick and Tile men tell you that the ERIE gives STEADIER and MORE RELIABLE service than any other ¾ yd. shovel?

How has the ERIE maintained its leadership ever since the first ERIE Shovel was built?



Constant improvement of one good model

We have built more than 1,600 three-quarter cu. yd. "B" ERIES (by far the largest number of shovels of one size and type ever built by any manufacturer). This unique experience with one model has worked practically every "kink" out of the ERIE's design. There has never been a single radical change in the original design of the ERIE Shovel—but there have been many improvements all over the machine, adding greatly to its efficiency.

When you own an ERIE you have a machine that has been perfected as no other steam shovel was ever perfected before. Which accounts for the unusually steady service the ERIE gives.

The progress made by the ERIE Shovel is well illustrated by the ERIE lubricated caterpillar type mounting. It climbs grades as steep as 30%, and travels at more than twice ordinary speed. Steers by power from the cab, without the help of a man on the ground. Has many other advantages—all interestingly described in Bulletin W-60. Write for a copy.

ERIE STEAM SHOVEL CO.
(Formerly Ball Engine Co., Erie Pa., U. S. A.)
Builders of ERIE Steam Shovels and Locomotive Cranes.

ERIE

Revolving Shovels



WHY

DO OPERATORS OF
DRY PANS, WET PANS, CRUSHERS,
SEWER PIPE AND TILE
MACHINERY

PREFER

STEVENSON EQUIPMENT

THERE'S A REASON

A LIST OF NEAREST USERS ON REQUEST
ASK THEM

THE STEVENSON COMPANY

GENERAL OFFICES
AND
WORKS

Wellsville - - Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING

Chicago - - - Illinois

CONVENTION WISCONSIN CLAY MANUFACTURERS' ASSOCIATION.

(Continued from page 386)

75	8	6.00	2.00
80	8	6.25	1.75
85	9	6.45	2.55
90	9	6.70	2.30
95	9	6.90	2.10
100	9	6.90	2.10
110	9	7.05	1.95
120	9.5	7.20	2.30
130	9.5	7.35	2.15
140	9.5	7.50	2.00
150	9.5	7.70	1.80
160	9.5	7.85	1.65
170	10	8.00	2.00
180	10	8.15	1.85
190	10	8.30	1.70
200	10	8.45	1.55
210	11	8.75	2.25
220	11	9.05	1.95
230	11	9.35	1.65
240	11.5	9.65	1.85
250	11.5	9.95	1.55
260	12	10.25	1.75
270	12	10.55	1.45
280	12	10.85	1.15
290	13	11.15	1.85
300	13	11.50	1.50
310	13.5	11.80	1.70
320	13.5	12.10	1.40
330	13.5	12.40	1.10
340	14	12.70	1.30
350	14	13.00	1.00
360	15	13.60	1.40
380	15	13.90	1.10
390	15.5	14.20	1.30
400	15.5	14.50	1.00

In a discussion on "Should the Association be Continued," it was the unanimous opinion that the clay industry of Wisconsin cannot prosper unless the association is continued. The rate proposition was pointed to as one example where the united effort only can produce results and that the individual attempt would not reach anywhere. Other points in favor of an association were the advantages of exchanging views on problems and developments, particularly under present conditions; meeting the competition of substitutes by combined educational efforts, and the results already obtained by this as well as other industrial associations in furthering their individual interests in the commercial world.

A rising vote of thanks was extended to the officers of the association and others who were active in furthering the clay industry of Wisconsin during the last two years. No convention was held in 1921 and the officers of 1920 carried the work through last year. This appreciation was further augmented by the unanimous re-election of officers for the ensuing year. John Ringle, of Wausau, continues as president; Samuel Gunther, Port Washington, vice-president; Oscar Zimbal, Sheboygan, secretary, and Erwin Fricke, Manitowoc, treasurer.

While the attendance this year was limited, it was recognized that transportation facilities throughout the state had been affected by a severe storm a few days previous. It was suggested that the officers make the dates of the next convention earlier, as soon after the first of the year as is determined possible and advisable. The later date, it was said, finds many of the manufacturers active on work for the coming season and that they are unable to leave their business to come to the convention. Milwaukee was again recommended as the place for the 1923 convention.

President Ringle appointed the following committees: Railway Rates—Oscar Zimbal, John Ringle, Charles L. Burnham, Oscar Wilson and H. O. Zerrenner. Publicity and Legislation—A. A. Hilker, Erwin Fricke and Robert Guhr.

Registered at the convention were the following: John

Ringle, Ringle Brick Company, Wausau; G. P. Willett, Bristol Tile Works, Bristol; John J. Moroney, Chicago Brick Machinery Company, Chicago; Erwin Fricke, William Fricke Sons Company, Manitowoc; H. C. Zerrenner, Zerrenner Bros., New London; Samuel Guenther, Guenther Bros., Port Washington; Falls Brick & Tile Co., A. O. Wachter, Sheboygan Falls; G. M. Brown, Trevor Tile Company, Trevor; Oscar Zimbal, Zimbal Brick Company, Sheboygan; Robert Guhr, South Milwaukee Brick Company, South Milwaukee; R. H. Downes, Cook & Brown Lime Co., Oshkosh; A. W. Hilker, Hilker Brick Company, Racine; Charles E. Paeske, Milwaukee Wrecking Co., Milwaukee; S. E. Cullen, Hadfield-Penfield Steel Company, St. Louis; E. E. Meyer, The Clay-Worker, Indianapolis, Ind.

(No report made by resolutions committee.)

DEPRECIATION STUDIES.

THE CHAMBER OF COMMERCE of the United States which has made some special study of the subject of depreciation and issued a pamphlet under this head now offers the suggestion that each particular class of industry should study depreciation within itself, preferably through its trade association, because in that manner they can get a more definite idea of the normal rate of depreciation shown by buildings and machinery in a given division of industry. To take this thought home in the clayworking industry we have a wear and tear on machinery that certainly rates higher than in some other industries, consequently the general machinery rating of all industries would hardly be fairly representatives of the clayworking industry. It would naturally benefit the clayworking industry to make a survey of practices and opinions as to depreciation allowances in buildings, machinery and equipment that we may have a tangible basis for comparison by each concern making up its annual inventory.

NEW CHAPTER ON STRUCTURAL SLATE.

"A new chapter entitled, "Structural Slate for School Buildings," has just been issued by The Structural Slate Company, Pen Argyl, Pa., the material being prepared by The Structural Service Bureau, of Philadelphia. It is devoted entirely to the many uses of slate in educational buildings, with numerous drawings, illustrations, descriptions and specifications. The information is presented in such form as to make the data readily accessible to Architects, Boards of School Directors and Constructors. This publication is one of a series of chapters on Structural Slate being prepared by The Structural Service Bureau. Copies of any of these may be secured by writing direct to them."

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

By using this system you can reduce your fuel cost and your labor cost. You can increase the amount of first grade ware. You can raise the selling value of all your ware. It will make more money for you than you have ever made per year before. If you doubt these statements go and see for yourself and be convinced. As a matter of education in burning clay ware visit the following plants:

U. S. Brick Co.

Tell City, Ind.

Huntingburg Pressed Brick Co. Huntingburg, Ind.

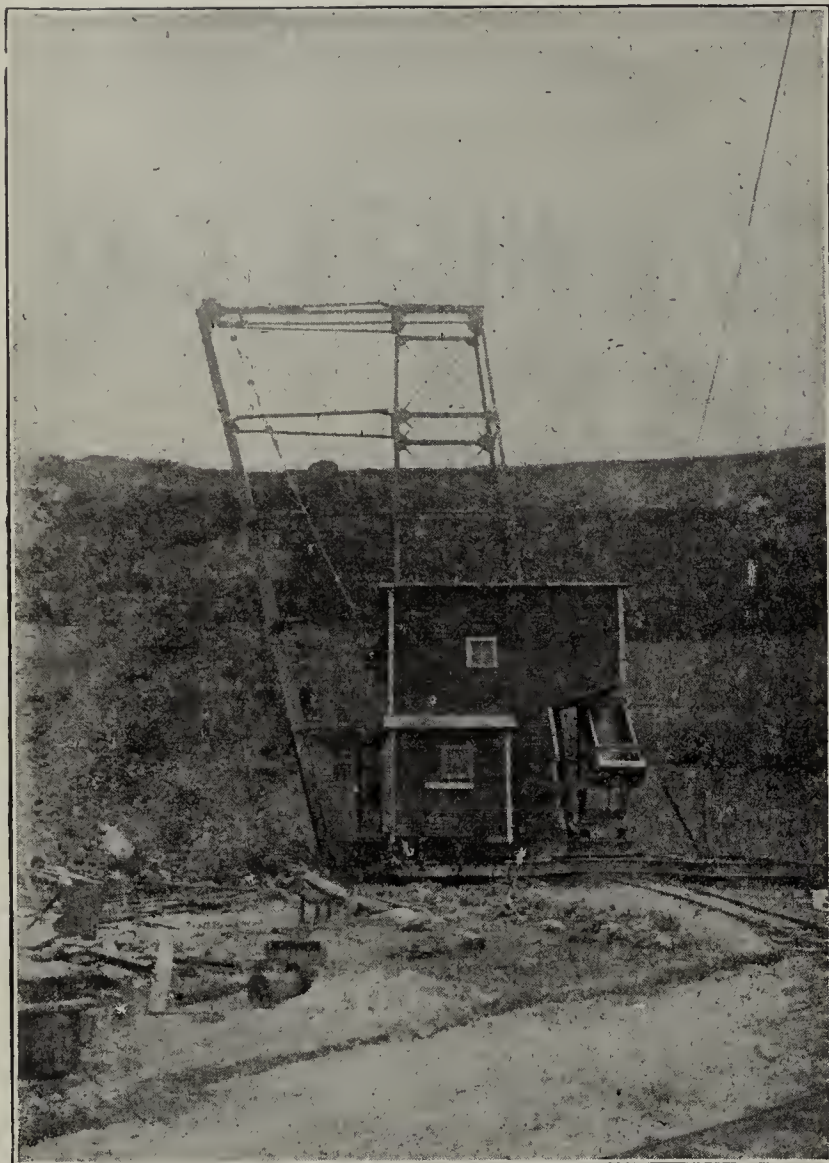
Standard Brick Mfg. Co. Evansville, Ind.

The Best Brick Co. Evansville, Ind.

Kalamazoo Clay Co. Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U.S.A.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.

BUILDING OPERATIONS in Evansville and other towns in southern Indiana have been unusually lively for this time of the year. Indications point to quite a revival in building by the first of April. The number of building permits in the city of Evansville issued during February showed a good increase over the preceding month and the corresponding months of previous years. The total building permits for February represented over \$98,000 and this was considered very good for this month. The permits covered the construction of several new homes. Contractors and building material men are of the opinion that 1922 will be one of the best building years in a long time. Many towns in southern Indiana have been reporting a shortage of homes for several years back. At Boonville, according to a report a few days ago, several people are living in tents, being unable to find a vacant house of any description. A good many building and loan associations in this part of the state have increased their capital stock during the past year in order to be able to take care of the building program for the coming year. Brick manufacturers are quite optimistic over the outlook. They believe that their volume of business during 1922 will be greatly in excess of 1921. Plans have been drawn for a number of new churches and school buildings in southern Indiana, southern Illinois and western and northern Kentucky during the coming year and many of these buildings proposed will be constructed of brick. The outlook is much more promising now than it was a year ago. General business conditions in Evansville are gradually improving and collections are holding their own very well.

Committees to handle a "Build With Brick" publicity campaign were appointed a few days ago by the Bricklayers' Union at Evansville. The committee on publicity is composed of Fred Zahn, John Andres and Charles Scarborough. The committee on advertising is composed of Charles Scarborough, W. B. Lensing, Frank Weikel and John Andres. These committees will arrange for a mass meeting to which the general public will be invited and people will be given data on brick construction work. It is expected that many good results will come from the campaign.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company at Evansville, has been re-elected president of the Chamber of Commerce of that city to serve the ensuing year. He has held the position during the past year. The body recently pulled off a membership campaign which was quite gratifying. Mr. Kleymeyer has many plans for the coming year which he hopes to work out and which he believes will result in a better and bigger Evansville.

Aaron M. Weil, well known pottery manufacturer at Evansville, returned a few days ago from a business trip to Indianapolis.

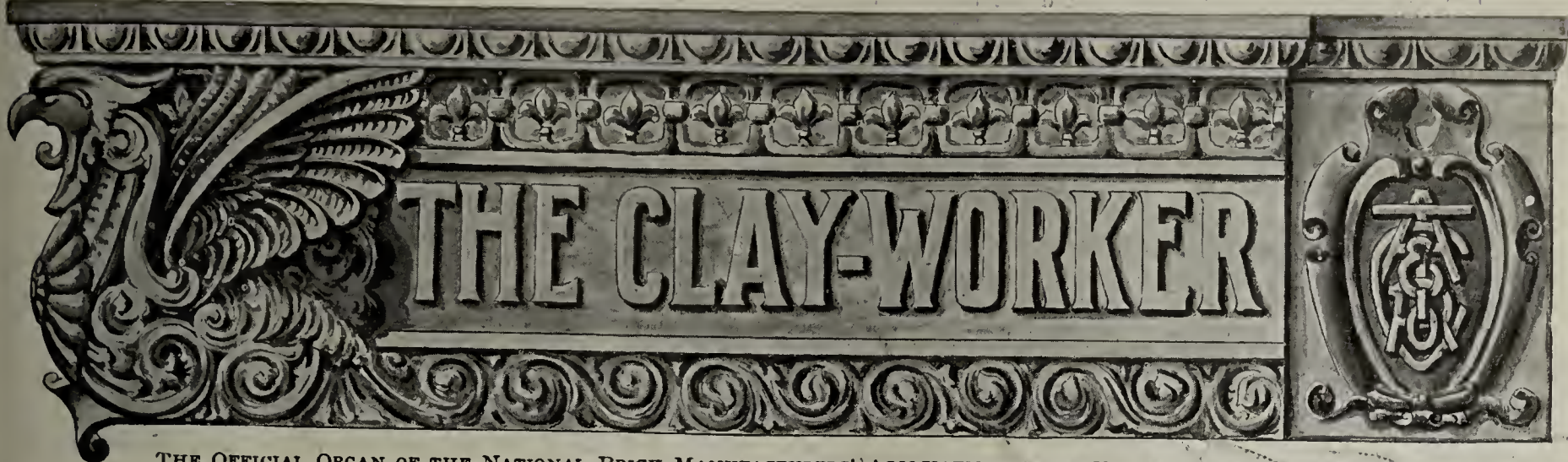
Bricklayers at Evansville and many of the other towns in southern Indiana are not expected to ask for any increase in their scale of wages on April 1, when the present scale expires.

Clarence Schute, president of the Best Brick Company, will take an active part in the spring ceremonial of Hadi Temple, Ancient Arabic Order of the Nobles of the Mystic Shrine, that will be held at Evansville on the afternoon and evening of Friday, April 7.

L. A. Folsom, president of the Industrial Brick Company at Boonville, Ind., was a business visitor in Evansville a few days ago. He said he looked for considerable activity among the brick plants of Boonville during the coming season.

It is expected that farmers in southern Indiana will be in the market for more tile during the coming season than they have for several years past, and tile manufacturers are anticipating quite a busy season.

A. HOOSIER.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 77

INDIANAPOLIS, APRIL 1922.

No. 5

THE ALPINE PEAK IN BURNED CLAY:

NEW WRIGLEY BUILDING Rises in its Terra Cotta Grandeur Above the Other Buildings on Michigan Boulevard, Chicago, a Monumental Picture of the Beauty and Servicability of well Burned Clay Products in Durable Construction.

AS A MAGNIFICENT snow-capped pinnacle caps the grandeur of a mountain range, so the new Wrigley building with its lofty tower of snowy terra cotta dominates the sky-line of Chicago's waterfront along Michigan avenue and entrances the gaze of Chicagoan and visitor alike.

It is by all odds Chicago's most spectacular architectural show piece, and demonstrates again and still more forcibly that terra cotta is the modern building material par excellence when it comes to making a building designed for purposes of everyday utility serve also as a monument of artistic beauty. Credit for this massive and at the same time exquisite piece of terra cotta work goes to the Northwestern Terra Cotta Company, which supplied all of

this material and supplied the many special ornamental designs under the direction of, and in co-operation with, Pierce Anderson of the firm of Graham, Anderson, Probst & White, the architects.

The Wrigley building stands on the north bank of the Chicago River, just at the point where the street-widening process for the boulevard link between north and south side park systems has given Michigan avenue a swing to the northeast. Thus the irregularly shaped white structure of sixteen stories, surmounted by the slender tower with its top three hundred and ninety-eight feet above the sidewalk, really commands the view along Michigan avenue boulevard from far to the south. Viewed in the radiance of morning light coming over the lake, silhouetted



Entrance to the Wrigley Building.

against the twilight sky, or gleaming at night under an artificial alpine glow supplied by a battery of search lights, it is the climax of Chicago's best skyline, irresistibly attractive to the eye and compelling thoughts and expressions of admiration even from those who see it every day. The fact that it stands at the highest point in the boulevard, measuring its maximum elevation from the upper level of the boulevard "link" bridge over the river, gives to it a still greater advantage in height over buildings elsewhere located.

The building stands on an irregularly shaped lot. Its shortest front is on the river, its longest fronts on the boulevard and on North Water street, with its rear bounded by Rush street. The total area of the lot is approximately 11,000 square feet. The net rentable area averages 8,171 square feet per floor. The structure is of steel mantled with ornamental terra cotta. Its foundations were especially carefully prepared and unusually expensive. The caisson foundations and the retaining wall—the latter of very heavy concrete, rest upon bed rock. It is to be an office building and all offices will have outside light. One floor will be devoted to stores and shops and this will be on the Michigan boulevard level, or on the third level counting from the ground. Thus the eighth floor of the Wrigley building is as high as the eleventh floor of any other building in the city. The lowest floor will be on the shipping level, the boulevard being carried on an upper structure in this vicinity to permit trucking traffic to continue at the old level close to the river. On the floor immediately below the store level there is a restaurant. This is finished with French windows overlooking the river. Efforts have been made to give it especial attractiveness, and here, too, the adaptability of clay products and their necessity in modern high grade architecture will be noted in the interior decorations. The floor is of tile with alternating squares of different colors.

The owners of the building, the Wrigley company, the chewing gum manufacturers, are occupying two and one-half floors of their imposing new home and renting the remainder. At first the erection of an office building in this location and so far north of the loop, seemed to some to be highly experimental, but tenants appear to have been applying for space and moving in in a gratifying manner, advertising firms being numerous as well as manufacturing concerns desirous of attractive rooms for executive offices.

The general architectural scheme is of the period of the French Renaissance, or to be somewhat more precise, it is of the period of Francis I. Subtle details have been employed by the architects and terra cotta artists to add other allurements to the mere spectacle of size and commanding position. The terra cotta work is not all of one shade. Five shades have been employed and nicely graded from the top which is almost a clear white, down to the base, which is slightly darker and almost matches the stone around the base of the piers.

Many people think that, wonderful as the building appears during the day, whether gleaming in the sun, or standing against a background of clouds, it is at its very best after darkness, especially in these early winter evenings. What city man and what visitor from the country, looking along the vast expanse of lighted windows in one of our city "canyons" after dusk, has not been held by some unexplainable attraction? At such a time of day the mass of lighted windows in the Wrigley building seem to bring to a close an avenue of light, but the gleaming white of the upper tower under the play of projected lights, encircled by ruby-like glowing spots and surmounted by the revolving light at the very top, is unlike anything ever dreamed of before in Chicago.

The Wrigley building is above all an advertisement, but

it is unique as an advertisement. It is in reality a huge billboard but without the inevitable crudities of billboards, and most remarkable of all without a word, a letter, sign, picture, or even symbol to indicate to the public what selling proposition stands behind it. When William Wrigley, Jr., the head and genius of the company which bears his name, decided to take this commanding position for his new business home, he felt, being one of Chicago's public spirited citizens, that because of the unique location, the structure should be of a character that would be a real credit and asset to his city, and he decided to put into the building just about one million dollars more than would have been necessary to erect such a sixteen-story office building as would have met ordinary purposes. More than that, in spite of the fact that Mr. Wrigley for one of the most widespread and consistently continuous advertising campaigns in the country, yet he absolutely re-



Stately Tower of the Wrigley Building.

fused to permit either his name or that of the company to appear anywhere on the outside of the building.

The decision was in excellent taste, and Mr. Wrigley and his company will reap therefrom a well deserved reward, for it is turning out a much better "ad" than if a flaming sign blazed forth the name of a brand from the top of the tower.

"What's that?" was the first question gasped by all who saw it in its first few days of completed grandeur. By now its fame has gone abroad, so that the visitors first hail now is:

"Oh, that must be the Wrigley building." Just as a first timer in Washington or New York City would exclaim, "That must be the Washington Monument" or "That must be the Goddess of Liberty."

At the beginning I compared this building with a mountain, although it is only in a flat city like Chicago that such a comparison would stand. It is also like a mountain in that

its character seems to change as one goes about and gets a different point of view. When the new South Water street boulevard is completed this structure will be the chief object in another vista.

BUREAU OF MINES BRIEFS.

THE CERAMIC STATION at Columbus is to make an extended physico-chemical investigation of chemical and physical changing which take place in wares during what is known as the oxidation period. An apparatus is being designed to measure volume and weight changing in one operation. Chemical and microscopical examination also is to play an important part in this work.

The investigation of dolomite cements will be continued at Columbus. The work will consist of calcining dolomite at a



The Wrigley Building, Michigan Avenue, Chicago.

temperature high enough to decompose both the magnesium and the carbonates and adding suitable agents to react the lime. The object is to eliminate the troublesome effect of free lime by neutralization. In this connection it may be mentioned, too, that the Bureau of Mines is to do experimental work in the dead burning of dolomite for refractory purposes.

The Northwest Experiment Station of the Bureau of Mines will build electric furnaces of various designs for the burning of super refractory shapes at Seattle, Wash. Also this station has completed a study of the cretaceous and tertiary fire clay deposits of western Washington and the residual kaolin like material of eastern Washington and is carrying on work on silica and other refractories.

In order to keep in touch with the needs and development of the local ceramic industry, the ceramist of the Northwestern Experiment Station of the Bureau of Mines at Seattle,

Wash., will maintain close contact and co-operate as much as possible with those engaged in this industry. He will conduct occasional short investigations on such subjects as a study of the white-ware possibilities of the State of Washington, a survey of the raw materials for a glass industry within the state, and such others as may present themselves in the course of events.

English china clay is preferred to Georgia kaolin by many American potters. In comparing the two it is found that the English clay disintegrates in water more readily, produces a body which casts more satisfactorily, gives lower drying and bisque losses and requires less linseed oil to produce a spreading condition for oilcloth and produces a paper of better finish and more resistant to moisture. In preliminary work by the Bureau of Mines it was found that after calcining Georgia kaolin to low temperatures (500°-600° C.) it possesses properties similar to the English china clay, i. e., its absorptive properties are decreased to that of the English china clay and the rate of capillary flow and the permeability of water is increased. Further tests are to be made to determine its commercial feasibility. The effects of ageing the calcined clay in air and water are to be studied to determine how far the calcined clay will revert to its original state and also to study the varieties produced by different calcination temps.

TRADE ASSOCIATIONS AND THE LAW.

THERE IS STARTING now what looks like a drive among commercial and business publications for a repeal of our anti-trust laws, and this is being brought about largely because of the activities of Attorney General Daugherty and some of the recent supreme court rulings against trade associations for open price reporting.

The anti-trust laws as they now stand permit the forming of big consolidations and seem to have a pick on trade associations and their activities, especially those that are active in a commercial sense.

Meantime there has developed special farm legislation permitting co-operative buying and selling, things that would not be permitted by an organization of manufacturers or merchants. This, with the activities of farm blocs in legislative matters and of the labor union bloc, have aroused business interests to a realization that the present anti-trust laws are a serious handicap to business and should be repealed.

It would not hurt so much to let the laws stand if the courts would use a rule of reason in their interpretation of them, and would distinguish between good trade association work and bad, as they have been known to do between what is termed good trusts and bad trusts.

As it stands today it leaves the trade associations of business and industry at the mercy of Attorney Generals and politicians, and the recent correspondence between Secretary Hoover and Attorney General Daugherty has helped bring this thing to a head. As predicted in THE CLAY-WORKER recently, there is no question that Secretary Hoover's idea in favor of trade association activities will find wider favor than the views of Attorney General Daugherty. The answer has come already; it is a plea for the repeal of our anti-trust laws.

According to the reports received through the tourists returning from Holland, brick plants there are running to capacity. The weather had been favorable for the past six months and some of the yards have been burning three million to four million brick per year, which is considered a big business by the manufacturers.

COMMENT ON N. B. M. A. CONVENTION WORK

The Function of The Organization, Its Value and Importance and The Proper Sphere of Other Associations

I REGARD IT as one of my misfortunes of the year that I was unable to attend the N. B. M. A. Convention, but having been to so many of these conventions, the excellent report in *The Clay-Worker* enables me to form a clear mental picture of every session and I appreciate anew the value of such meetings to the earnest, progressive brickmaker who is always seeking for more knowledge of his art, improvement of his product and greater economy in operation. As I read the papers and discussions I frequently said, like the Methodist brother at the prayer meeting, "amen" and sometimes I made more extended remarks to myself, viewing the subject from other angles. As some of these subjects are of vital interest, further amplification of some points are desirable and, as I could not "speak out in meetin'," may I be permitted to talk through the official organ of our association?

The first subject that "set me to thinking" was touched upon in President Wilson's address and later brought out formally in the resolution presented by Mr. Blair. I am pleased that an effort is to be made to secure co-operation among the different associations of brick manufacturers and that the N. B. M. A. is taking the initiative in this. Mr. Stevens, our newly elected third vice-president, whom I was glad to see was appointed a member of this committee, showed by his remarks that he sensed better, in my opinion, what could practically be accomplished by co-operation of the allied associations. Before entering upon further discussion of the resolution, let me set down, categorically, what I believe the committee should aim to accomplish by co-operation:

No Conflict of Interest, Hence Harmony Should Prevail.

1. To ascertain the cause of the lack of harmony among these associations, especially to get down to the foundation of the prejudices and jealousies towards the N. B. M. A. and its management that have so long created and fostered a spirit of opposition to all the activities of the association and deliberately endeavored to belittle its usefulness and, if possible, bring about its downfall.

2. To show that the purposes and activities of the N. B. M. A. not only do not conflict with those of the various commercial associations, but that they supplement them by occupying an entirely different and, at least equally important, field of endeavor that should be properly appreciated and supported by every manufacturer of structural clay products.

3. To show that it is for the best interests of each individual manufacturer and for the highest welfare of the brickmaking industry as a whole that there be a large general association for the discussion of the technics of the art, the problems of manufacture, more efficient and economical methods of operation, questions that are of equal interest to every branch of the industry,—an association to which every man employed in brick manufacture may belong, as well as every man engaged in the manufacture of clayworking machinery or in the promotion of better methods of drying and burning,—a representative association of the whole brickmaking industry that will, as Mr. Blair so well stated, present a "united front for public opinion."

Associations Should Co-operate Cordially for Good of All.

4. To secure the co-operation of all these associations in a systematic effort to increase the membership and influence

of the N. B. M. A., united in the building up of a larger association of brick manufacturers that will meet once a year in general convention for the study and discussion of all matters of common interest.

It will be noted that I am not advocating the meeting of the different associations at the same time and place. In my opinion, this would be impractical, as well as undesirable. The commercial associations are composed of corporate members, the executive heads of the business representing the firm or corporation and each firm or corporation having but one vote. Their meetings are purely business meetings and their business can best be carried on in executive sessions and where there are no other distractions. The factory managers, superintendents, engineers, foremen, etc., have no place in such associations, nor have the manufacturers or dealers in machinery or equipment. The N. B. M. A. is made up of individual members, every firm or corporation being entitled to as many members as can be persuaded to join, and each member has a vote. All their sessions are open to the public.

Ceramic Society Sufficient Unto Itself.

The A. C. S. is a large body whose activities cover nearly the whole field of the silicate industries. Only one section of the Ceramic Society, the Heavy Clay Products Division, is devoted to brick manufacture. The society is doing an important and valuable work in directing researches, in which our Committee on Technical Investigation should co-operate. There are some in the Heavy Clay Products Division who are hoping and expecting that it will supplant the N. B. M. A. as a technical body of brick manufacturers. Will it do it? That depends upon the brick manufacturers themselves or the future management of both associations. Do the brick manufacturers of America want their representative body to be a division of the A. C. S.? If so, then let every brick manufacturer join this society, so that their influence in this organization may be greater. In such case there will be no further need of the N. B. M. A. It would be hard for us old brickmakers to give up our association and it is doubtful if a large number would consent to do it. The younger men in the brick industry, especially those who have had a technical education, naturally think that they are getting a little above the common clay, making a little more of themselves, by their association in the Ceramic Society. Ceramic is a more impressive term on the minds of the general public than brick. These young men think it a greater honor to have their first creative efforts published in the transactions of the A. C. S. than in the transactions of the N. B. M. A. I can understand this and do not blame them for it. But the longer they are engaged in the making of brick, the more they will appreciate the virtues of the common clay and the problems connected with its manipulation and the greater will be their respect for the brickmaking business. In any case, so long as the N. B. M. A. is functioning as it is today I believe that it should not divide its time in convention with any other association and, in my opinion, the meeting of such a large and diversified body as the A. C. S. at the same time and place as the N. B. M. A. is no longer practicable. However, let me say here that I would not oppose any purpose of the resolution nor this common meeting that is proposed if the majority favor it and can bring it about, but for my

self, I would rather go to two separate meetings at different times than to one joint meeting with its rush and confusions.

Proper Sphere of the Common Brick Manufacturers' Association.

The C. B. M. A. was promoted purely as a commercial organization, having for its objects the advertising of brick, the maintaining of prices, the establishing of uniform cost accounting systems, etc., though backed by a certain element that, for selfish reasons, has long desired to supplant the N. B. M. A. Its efforts to secure a large attendance at its last annual meeting by advertising a "mystery" and a special session for the machinery manufacturers was so foreign to its commercial purposes and such a desperate effort to outnumber the attendance at Indianapolis as to be laughable. The common brick business is necessarily a local business, and a commercial organization of common brick manufacturers to be most economical and effective must be local, the territory to be covered by each local organization being dependent upon local conditions. These local organizations could be as well directed through the N. B. M. A. as through a separate association, except that the N. B. M. A. could not make assessments for general magazine advertising. But isn't local advertising of common brick more effective and profitable for the local manufacturer?

I don't want to be understood as advocating or suggesting the abandonment of the C. B. M. A. I am not opposing any association. I believe that they are all doing good and are worthy of support. I am merely giving my own personal views of the proper sphere of each and pleading that every firm or corporation making common brick be represented by one or more members in the N. B. M. A.

One Convention Sufficient for Machinery Manufacturers.

Now let's examine the argument that the separate conventions, at different times and places, are a heavy burden of expense upon the manufacturer. First, as to the brick manufacturer, only a few are members of more than one commercial association, and these are large corporations having more than one plant, so that the expense of attending conventions does not cut much of a figure compared with the amount of money they put up to maintain the activities of these commercial associations. Most manufacturers would not need to attend more than two conventions a year, that of the general, technical association, the N. B. M. A., and that of the commercial association of their own branch of the industry. Only one official need to attend the commercial convention, but in the general, technical convention the manufacturing end of the business should generally have more than one representative, depending upon the size of the plant. Many of these would pay their own expenses, as I did for years, but the expenses of factory managers and superintendents should be paid by the firm or corporation. A manufacturer or official who objects to this expenditure has a narrow view of the means of building up an efficient organization and a more profitable business.

The Machinery and Supply Dealers Interested Directly in But One Association—the N. B. M. A.

Mr. Penfield undoubtedly voiced the opinions of a class who swell the attendance at our conventions and whom we desire to see there, when he stated the increasing demands upon their time and money in attending so many conventions. This should not be necessary. The machinery manufacturers should not be expected to attend but the one general convention, that of the N. B. M. A. The commercial associations have not asked nor desired their attendance, but this year, the newest commercial organization in the field made a special effort to secure their attendance. In fact, one machinery

manufacturer, who was at the Indianapolis convention, was approached by a partisan member of the C. B. M. A. and told that if he was not at the St. Louis meeting, he would never get another order from him. Doubtless other machinery manufacturers were told the same thing. Evidently the machinery manufacturers must get together on this and maintain their own policy about conventions.

One thing is certain—the N. B. M. A. is permanent and will live and flourish long after some of these commercial associations have ceased to exist, for it is not founded on selfishness but on the altruistic principle of "the greatest good to the greatest number" and the advancement of the brick-making industry as a whole. W. D. RICHARDSON.

(EXPLANATORY: The foregoing is a voluntary, personal expression by a veteran member of the N. B. M. A. who has taken an active part in its proceedings for more than a quarter of a century. During that long period no member has rendered more efficient, loyal and unselfish service to the Association. He has acted upon the Rotarian principle, "He profits most who serves best." He certainly has served as best he could, he has also actively supported all of the other associations, though never losing sight of the fact that the N. B. M. A. was most important as an active factor for the betterment of the entire clay craft. For that reason, he naturally desires its perpetuity, realizing that while it has accomplished great good, there is yet much important work for it to do in its chosen and proper field of endeavor. As Mr. Richardson states, there should be close, hearty co-operation between all the associations. There need be no lack of harmony if the other associations adhere to their original plans and policies, which the officials have declared publicly would not in any way be permitted to conflict with the N. B. M. A. It is only when they depart from their declared principles and purposes, that there is any occasion for discord, and then the responsibility rests wholly with them. They alone are to blame for any trouble which results from unfair and inconsiderate procedure on their part.—EDITOR.)

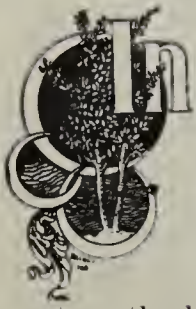
EMPLOYMENT RELATIONS.

We are still going through some readjustment in industry and especially in the matter of wages and the relationship of employers and employees. We will probably have an annual crop of spring contentions leading to strikes, but out of it all there is a hopeful sign that probably by mid-summer we will have completed the readjustment of wages in the building industries, coal mines and railroads, the three divisions where it is contended wage rates are out of proportion to the balance of the industrial world.

Underlying all this, however, there is the question of better co-operation between employer and employee which we should get at and find a rational solution to. Associations of both employers and employees make what purports to be an earnest plea for better co-operation between employers and employees, but sometimes one is suspicious that there is lack of frankness and sincerity in part of this and that each one is jockeying for position and public sympathy. What we need is less gallery play and more actual getting together in this matter.

Incidentally, some good brick men have been taking an active part in efforts of this kind, among them being William Schlake, head of the Illinois Brick Company, at Chicago, and general manager of the Associated Building Contractors of that city. The Chicago situation has been a rather trying one, but there are now hopeful signs that a reasonable solution of it will be found and that in the course of the present year there will be developed a much better understanding between employees and employers. And when we once get this the solving of the unemployment problem will be comparatively easy.

THE GLORY OF THE BRICK.



THE UNITED STATES there is as great variety of building materials as can be found anywhere, and some of which are peculiar to certain districts. Some of these are good, bad and indifferent. Some of them have a past and in consequence no future. Others hope for a present, but have neither a past nor a future. None of them has such a glorious past as the brick and none of them have such a comforting and magnificent vista of a future so large and brilliant as the brick.

Some goods, like some people, overtook their future in the past but the brick has constructed such a substantial and extended future on the strong and firm foundation it laid in the days gone by, that it has it all before it, and



King Edward VI Grammar School, Nuneaton, England.

the same will be said of it a hundred years hence, as it may have been said a century ago. There is one thing can be said of brick without fear of its stoutest opponent or competitor being able to gainsay it. That, is, that it is morally certain that any material that has such an antiquity and has had so widespread and extended use during all these centuries would have dropped out long since if it had proved to be so unworthy of its purpose as are some of its present-day competitors, but today it is holding its own as it held it five thousand years ago.

No Doubting the Supremacy of Brick.

If one doubts the popularity of the brick one has only to consider its world-wide ramifications, its extensive use in every country under the sun, and the newly colonized and populated districts where man never seems satisfied until he has fashioned brick of some. One has only to notice, too, the way it is combined with other materials to be assured of this popularity. Here is an instance where the combination with other materials is not only due to choice and personal liking, but also to keen necessity. In the district where these lines are penned, there is much flint stone work used in domestic and other structures, but the brick is there, too, occupying places of honor.

The flint may be picturesque and antique looking, and it may be all very well for adding bulk or for using up good mortar—in fact, it must have the best—but like a cipher, it cuts a poor figure by itself. The most ardent admirer of the flint would not trust it at the quoins, the sills, or the lintels. Oh, no! The honest and dependable brick must march in then.

The same may be said of many building stones. Often when they are employed in domestic and other buildings, the piquant brick has to be called in to give life and variety to the design, and, in the case of small local stones, to give strength and unity to the structure. In other cases the brick is hid from view, behind marble, perhaps, or other showy facings, but it is there all the same and its virtues are appreciated by those who put it there or it would not have been used to do what the more fancy material will never do in such circumstances. And when that stonework and marble is all decayed and must be renewed, the brick will be keeping that building up as well and as safely as ever it did.

No Limitation to Use of Brick.

Undoubtedly, brick is still without question, the best all round building material one can use today, as it ever was. It can be placed on the earth, or under it; above it, or around it. It can be placed near water, or in it; to contain it, or to restrain it. It can be subjected to the action of earth, air, fire or water and it defies them all. It serves its purpose as efficiently in a well as in a baker's oven, in the foundations of a bridge at the bottom of a river, or in a chimney stack above the town.

That such a material should be so popular is scarcely a



Weddington Hall, Nuneaton, England.

thing to be wondered at, but it is the reliable nature of the service it offers, together with its handy size that have much to do with its universal employment. The shape and size of the brick makes it a highly convenient unit of building construction and the bondings that have been adopted in consequence produce buildings of the maximum strength for the minimum expense. With what other material can a nine-inch wall be built so strongly? With the right kind of mortar it becomes as solid and stout as nine inches of anything can make a wall.

Brick the Most Beautiful Building Material.

Not only is the brick useful and enduring but it is beautiful. The poet has not sung its praises half so enthusiastically as it has deserved. He has noticed it in the cottage, the garden path and the bridge, but it has beauties wherever used, if left severely alone. See it in the garden wall with its lichen and moss. With what other building material do these harmonize so well as with the red brick? See it in the garden path with the little rock plants growing between. What better setting can these have? See it in the porch with the greenery of the climbing plants around it. Its color blends with the foliage and there is a perfect harmony between them.

The red brick being generally the most common, finds

the greatest favor, but the yellow one and the various shades of buff have their beauties. In the towns the smoke from innumerable chimneys may soon blacken them, but see them in the country house and garden. What goes better with the red roses trailing over them? These and many another flower and plant make brick of the yellow and buff variety a close competitor in the artistic triumph of the material we are dealing with. What more harmonious blending of color can one want when the purple clematis or wistaria with their green foliage are climbing over it? Here surely, we are getting near perfection.

Or take brick of these yellow tints without any extraneous assistance. Behold it in the newly-built residence with its lintels and quoins in red or purple brick. What is there to mar the landscape in this case, as far as color is concerned? Does not the very foliage of the surrounding trees proclaim in every flutter that it is in agreement with the color scheme? Or, see it with its red tile roof, either new, or old, when the lichen and moss begins to cling. Anything wrong with that for a picture?

Variety of Color an Added Charm.

There there is the mottled brick, the delightful browns and purples of various styles of finish. Who can conceive



The North Lodge, Arbury, Near Nuneaton, England.

anything built by man more glorious than a wall of these browns with their soft harmonies of tint and their blending of color tones? With a red tile roof a house with such walls conveys in the merest glimpse of it in winter from outside the expectation of the comfort within and one's temperature rises at the very sight. There is a great deal in the blending of brick tints in building, especially in the erection of houses, and architects and progressive builders are appreciating the fact of the help they can get from brick in this way.

The best part of the matter is that this beauty increases with length of service. The writer recently had a garden wall that, owing to great age, a rather treacherous foundation and a high wind, was at length blown down. Every brick was used again. Nobody could say how old they were, but they were probably stronger than the first day they were made. And what a glorious wall they made again. Such tints; such blending of color, such variety of tones and yet such perfect harmony. A wall that one was proud to show to visitors and never tired of pointing out its beauties and its virtues.

There are many makes and colors of brick, but with the right treatment from the architect and builder it is a poor one that has not some mark of beauty. The brick is so generally useful that its art value stands a chance of being

submerged in its other good qualities, and this article has no other purpose than the sincere, though tardy, vindication of its beauty it so thoroughly well deserves and should receive.

ARTHUR W. JORDAN.

Corfe Mullen, Winborne, England.

Written for The Clay-Worker.

WHAT THE NEAR EAST RELIEF IS DOING.

THE largest assemblage of orphan children in the world is at Alexandropol, a stricken city of Armenia, where the Near East Relief organization is housing and feeding 18,000 boys and girls of the average age of eleven years.

This is only one feature of a colossal task being shouldered by the relief committee in seeking to save a perishing nation. All over Armenia and other Bible lands of the Near East are scattered orphanages and relief stations which are maintained solely by American charity. The Near East Relief, chartered by the American congress, is appealing to generous people of the country to aid in a great life-saving movement. In addition to caring for Armenian orphans and feeding thousands of helpless refugees driven from their homes because of military disturbance in their unhappy land, and because of persecution by the Turk, Near East Relief is trying to save the young womanhood of the land from Turkish bondage in the harem. It is said that 50,000 Armenian women and girls are held in shameful slavery. Eleven rescue homes are maintained where these unhappy girls are taken as fast as they are released.

Near East Relief national headquarters is at 51 Fifth



Griff House, Nuneaton, England ("George Eliot's Home").

avenue, New York City. Philanthropic men of nation-wide reputation are giving their support to the movement. Dr. James L. Barton, Boston philanthropist, is chairman of the national organization. Cleveland H. Dodge, New York banker, is treasurer of all funds. Each state has a Near East Relief committee. Unusual emphasis is being placed on the appeal this spring due to renewed calls for aid from the stricken area.

In all the orphanages of Near East Relief the greatest emphasis is placed on self-help and industrial training. The thousands of children now being kept alive by American contributions are being trained for self-support as rapidly as they become old enough to learn and work. Of these unfortunates, C. V. Vickrey, general secretary of the relief movement says: "We are helping the most thrifty people of the Near East and they will not ask our aid one moment longer than is necessary to restore them to self-support." An American commission which visited Armenia last sum-

mer found in Alexandropol 2,000 girls knitting, sewing and making clothing that practically supplies the orphanages. Leather for 8,000 pairs of shoes was on a ship that carried the commission from Constantinople to Batoum and a few days later found hundreds of little boy cobblers at work.

The children of the Bible lands—unfortunate little folks who suffer through no fault of their own—fairly worship America and its institutions. They look upon America as their only friend in the world. Mrs. Florence Spencer, Dur-yea, New York, woman in charge of the women's division of Near East Relief, after a recent tour of Armenia said: "One

of the most cheering things I saw was the thousands of children who were being fed in dining rooms at Tiflis. Between 6,000 and 7,000 of them had organized a parade on our Fourth of July and carried flags made by themselves, marching through the streets of Tiflis to express their appreciation of what America had done for them. Every single child in all that multitude was dressed from head to foot in old clothes from America."

Sympathetic Americans are asked to "adopt" these little unfortunates. Take them into the heart but not into the home. It costs \$60 a year to support a child in an Armenian orphanage. This may be paid at the rate of \$5 a month.

REVIEW OF THE ANNUAL CONFERENCE OF THE NATIONAL FEDERATION OF CONSTRUCTION INDUSTRIES.

THE construction industries proved in their interesting and comprehensive displays at the National Construction Conference, April 3, 4, 5, 6, at the Drake Hotel, Chicago, that every branch and all associations concerned are concentrating on the problem of reaching the irreducible minimum in the cost of construction and elimination of waste.

The various trade associations showed that they were ready to back up Secretary Hoover's constructive program for the real fundamental activities of collective action by associations properly conducted. Their discussions and displays demonstrated that tremendous progress has been made through these economic and soundly organized groups in elimination of waste and unnecessary cost of construction. For example, the Associated Tile Manufacturers showed the varieties of their products reduced from 735 to 115, that in the case of a cap, for instance, they have reduced from nine varieties to one. They showed the splendid co-operative service they are rendering architects and engineers, industrial plants and other users all for the benefit of the general public. The Paint and Varnish Industry showed the forward steps they have taken along safe and sane lines of co-operative effort. Other similar instances could be cited from all branches.

In fact the whole meeting bore out the slogan adopted by the National Federation of Construction Industries as the key note inscribed on the badge or pin given its membership and all attending the conference, "The Strength of an Industry is its Service to the People."

While the convention was not a large one in number of people present, it was the most representative gathering of every interest involved in the betterment of all construction, besides Secretary Hoover and other representatives of the Department of Commerce. Either the President or the Vice-President or official representative was present of each national organization, representing bankers, building and loan companies, insurance interests, builders, builders' exchanges, realtors, railroad and public utility construction departments, architects, engineers, federal, state and municipal construction departments, sub-contractors, material producers, manufacturers, wholesale and retail dealers and publishers of the papers serving these fields and joint research organizations maintained by all of these groups, such as the American Engineering Standards Committee.

A better co-ordination of associations is to grow out of the meetings with the unification of programs of each association to secure the most effective results and elimination of all duplication of effort and unnecessary organization expenses, so that as one man put it, "The construction associations will not expend eighty per cent. of their income on organization and only twenty per cent. on actual effective service rendered."

Never before has such a unanimous willingness been evinced on the part of all interests and all associations to work together on such a commendable program. Undoubtedly within a short time we shall see evolved a method whereby the total costs of the necessary associations in the field of construction industries will be reduced but more effective results secured.

The following new members were elected to the board of directors: Mr. F. W. Walker, executive secretary of the Associated Tile Manufacturers, Beaver Falls, Pa.; Mr. D. Knickerbacker Boyd, architect and structural standardist, Philadelphia, Pa.; Mr. E. J. Russell, architect, St. Louis, Mo., to fill the vacancies on the board. The other directors and officers were retained, Mr. E. T. Trigg, president, and Mr. W. S. Hays, secretary.

ADDRESS OF HERBERT HOOVER BEFORE THE ANNUAL CONVENTION OF THE NATIONAL FEDERATION OF CONSTRUCTION INDUSTRIES, CHICAGO, ILL., APRIL 4TH, 1922.

During the past ten months, the Department of Commerce has given intensive study to the situation in the construction industry; to the national needs in building and construction; to the manufacture and distribution of materials to construction, to its finance, and to its conditions of labor. We have studied the form of trades organizations and their practices. I have had the advantage of conferences with many hundred leading manufacturers, engineers, architects, contractors and labor leaders.

The department has been systematically co-operative with the industries, endeavoring to give such assistance as the government can properly take in relief of the housing shortage. I believe much has been accomplished.

I have been urged by the leading men in these activities that I should take this occasion to frankly express our conclusions in the matter. This can be done very simply:

First: The practice of some small minority are unendurable. They smear with shame the high standards of American business and labor, they drag in disrepute that vast majority of good men in these vital industries. This situation simply must be cleaned up. The government can catch occasional crooks but the cleaning can be done infinitely better by the decent men in the industry if they will organize to do it. It must be done if we would protect our business and commerce from the steady invasion of regulatory hands of the government. I wish to emphasize again that the vast majority of men in these industries do not engage in these practices but some out of self-defense are forced into them by others.

Second: A great field of service to the industry itself and

to the country as a whole lies in the elimination of those great indirect wastes which are beyond the control of any one individual man or concern and can therefore only be accomplished by associated action. And if we would secure the housing and construction now so badly lagging behind our needs, we must cheapen its costs. It can be cheapened at a gain in stability to the industry and still hold high standards of living amongst the vast army of workers in the industry. Efficiency in industry is more important to the nation than the margins of profit or the rates of wages over which we do most of our quarreling.

Third: To accomplish these ends, we need cleaner organization of the trades, not the destruction of trades organization. The initiative of the single individual is the most precious part of our whole economic fabric. But there are limits beyond which if we would make the full field of national efficiency, we must have co-operation between individuals. This is not a limitation of individual initiative; it is an extension of it. The restraint of constructive action for better business practices.

In the matter of business and labor practices of the minority, I need not recite the repeated exposures in all directions that have sickened the public during the past twelve months. There are other things that have not yet been exposed. I have no taste for demagogic statements. I do have an aspiration for constructive remedies.

Let us take a single material, lumber. Several leading manufacturers inform me that the time has come when we must have a guarantee against short deliveries and fraudulent alteration of qualities. The product of the honest miller must reach the consumer as the manufacturer wishes his product to reach the consumer. Also, he must have protection from the crooked competitor. Is it not possible for the National Lumber Association to take upon itself the duty of giving a brand to lumber that will show its content and grade? Many commodities are assured as to quantity and grade under the inspection and rules of our voluntary trade associations. If you think it wiser to do so, we could probably secure the enactment of a "Pure Food Law" in all building materials. I would much rather see the trades themselves establish their own standards.

We need a cleaning up in the statistical work of the trade associations. Some kinds of this work stand condemned in the courts as a restraint of trade and against public interest, yet other kinds of statistics are in the interest of the public as well as in that of the trades themselves and have not been condemned.

We need in our organized labor a removal of every restraint upon effort. No thinking man wants over-long working hours. What is wanted is the full, complete effort of every man during his working day within the utmost of his ability. We need a further revision in the labor world that the volume of employment is not increased by restriction upon effort. The absolute contrary is the case. There can be no answer to the fundamental fact that the standard of living of all the people is the simple quotient of the commodities and services we produce. The more we cheapen the production of a commodity, the larger the number of people who can obtain it. Restriction upon effort in the building trades simply reserves the better class of buildings and of homes to the better-to-do fraction of our people. At present costs, it is scarcely possible for a worker from his own income to build a new and ample home. We want a nation of home owners. There are more buildings needed and in position to finance themselves than there are skilled workers to build them if we could reduce the costs of building. Any justification of those employers opposed to organized labor would disappear at once if labor used its organization to promote the best effort of its members.

Labor has a large field of service in the further elimination of jurisdictional disputes, the removal of all restrictions on effort, the elimination of restrictions on the use of materials. This requirement for full effort applies to those who work in hard collars as well as to those who work in soft collars. The standards of living to a large part of our people are higher than in any other part of the world today, but if we would extend these standards to the remainder of our people, it will be done only by full effort and the elimination of every waste in industry.

This brings me into the area of my second theme—the elimination of waste in manufacture and distribution. I do not intend to enter into details, for I need only to mention the question of simplification and standardization of dimensions and of quality, the standardization of buying and selling specifications, the greater uniformity in construction contracts, the simplification of building codes, and the better synchronizing of different construction industries towards the elimination of intermittent employment.

The term "simplification" we have been using to cover reduction in the tremendous wasteful range of varieties in nearly all products. You gentlemen will certainly admit that the dimension of varieties of almost every component in construction industries can be halved or quartered to the great advantage of all groups. These economies in production and construction ramify into everything from bricks, lime, stone, lumber and hardware, to paint. These efforts do not need to trespass the field of variety and style nor to undermine the distinction of any manufacturer. They can be accomplished in no way except through the voluntary action of trade associations and thus through co-operative effort in the trades.

In these trades there are three groups of organizations: First, of the producers and distributors of materials; second, of the representatives of the consumers through the contractors, architects and engineers; third, of labor through the different trades.

I have before me a proposal of the consumers' associations to consolidate their organizations and to demand certain standards both of business ethics and products from the producers and distributors of building materials. I believe co-operation is better than antagonism, and if the right and forward thinking men on both sides can get together, they can solve these situations.

I have in my mind such a case recently where the paving brick manufacturers co-operated, through the Department of Commerce, with the municipal engineering associations to reduce the variety in the dimensions of paving bricks from over sixty in number to seven—to the mutual benefit of the manufacturers and the public.

And this brings me again to trade associations themselves, whether manufacturers, distributors or workers. I believe in them. They are a complete necessity in our growing economic life. They can and have been mis-used. They can make for stability and economy in industry and for public welfare. Their two greatest fields of usefulness lie in the lifting of moral standards in these trades and in the increased efficiency of our production and distribution.

This question of reduction of national waste is one of our first problems as a Nation. If we would recover the losses of war, if we would hold our own in foreign trade, if we would maintain and increase our high standards of wages and living at home, it can only be accomplished by cutting out our national lost motion and waste. The building trades can pioneer a great trail or national advance in this direction.

It has been my ambition that the Department of Commerce should co-operate with every rightful effort to accomplish these purposes; that it should never attempt to dictate to our business or commerce; but that it should itself be part of the co-operative effort of the whole community to our

economic betterment. It is in this vision that we offer you our assistance and help. In the development of a sense of co-operation in industry, to these ends we will reinforce the foundation of our economic life in individual initiative—not in the patent medicines of government interference. (Applause.)

RESOLUTIONS ADOPTED

CO-OPERATIVE TRADE ASSOCIATIONS.

WHEREAS, The National Federation of Construction Industries regards the existence of co-operative trade associations, properly conducted, as of very great benefit to the construction industry and to the public interest; and

WHEREAS, Grave uncertainty exists in regard to the extent to which such co-operative associations may operate without violation of law; and

WHEREAS, This Federation regards with approval the efforts of the Secretary of Commerce and of the Attorney General to ascertain the limits within which such associations can legally carry on their work; and

WHEREAS, It approves all efforts to continue the beneficial operation of such associations;

THEREFORE, BE IT RESOLVED, That this Federation believes that such co-operative associations should be relieved from uncertainties and from the possibility of unintentional violation of law by amendments to the anti-trust statutes which will more clearly define their extent, and will state with exactness the co-operative action permitted to such associations; that this Federation believes that such associations should be permitted to define their purposes and to specify their proceedings to the Department of Commerce for review and approval.

BE IT FURTHER RESOLVED, That a copy of these resolutions be transmitted to both Houses of Congress to the end that such amendments may be passed.

CONGRESSIONAL RESOLUTION ON TRADE ASSOCIATIONS.

WHEREAS, A joint resolution has been introduced in the Congress of the United States asking for the appointment of a joint committee to consider and advise as to legislation affecting business co-operation; and

WHEREAS, This Federation is aware of the need of such legislation for the fullest development of the commercial fabric of the nation,

RESOLVED, Therefore, that the National Federation of Construction Industries, in convention assembled, heartily endorses the efforts of Senator Edge of New Jersey and Representative McArthur of Oregon to bring this need to the attention of Congress; and be it further

RESOLVED, That a copy of these resolutions be transmitted to the introducers.

EDUCATION IN HOME BUILDING.

WHEREAS, Another field of opportunity for the continued activity of this Federation lies in the exercise of its function as a leader of public thought in the construction field; and

WHEREAS, There is a definite need for educational publicity to encourage the ownership of homes by their occupants, to the end, as expressed by Secretary Hoover, that this may become more and more a nation of home owners; and

WHEREAS, The advisability of building and owning homes may be impressed upon the minds of a larger percentage of American citizens just as effectively and beneficially as those same minds have been taught, by means of publicity, to save money, to invest in securities, and to do other wholesome and profitable things; and

WHEREAS, Home building has been in many instances discouraged by the spread of false beliefs that home ownership is not as profitable as other forms of investment; and

WHEREAS, The dissemination of the home building idea would go far toward stabilizing the building industries and thereby leveling the high peaks and low spots of construction activities, thus creating a field for permanent welfare work on the part of this body; therefore be it

RESOLVED, That the President of the Federation appoint a Committee of five whose duty it shall be to investigate the possibilities of financing such a campaign of education and ascertain whether or not the various building interests here represented can be brought together for such co-operative work; and be it further

RESOLVED, That this Committee be instructed to meet at the earliest convenient time, make its plans and recommendations, and submit a report to the Board of Directors of the Federation at such time and place as the Chairman of that Board may designate.

INSTRUCTION IN BUILDING TRADES.

WHEREAS, The National Federation of Construction Industries looks with great alarm upon the insufficient supply of skilled mechanics to do the building construction absolutely required for the development of the country; and

WHEREAS, There seems to be wholly insufficient provision for proper instruction and training of young men in the building trades; therefore, be it

RESOLVED, That this Federation consider and make it one of its purposes to encourage the establishment of proper schools and to use other means for the training and instruction of building craftsmen; and be it further

RESOLVED, That the Chairman appoint a Committee or Committees to study these problems and submit to the Board of Directors, for its action, a plan of procedure.

FINANCING OF HOME BUILDING.

WHEREAS, The National Federation of Construction Industries regards the construction of homes for people of moderate means as one of the first essentials to the welfare of the United States, and believes that the individual ownership of homes should be encouraged in every possible way; be it

RESOLVED, That this Federation believes it to be of the utmost importance that the financing operations for the construction of small homes should be carried on with the least possible expense to the home builder, permitting him to pay the cost of the home in installments consistent with his income.

RESOLVED FURTHER, That the members of this Federation are urged to call to the attention of the members of the several Legislatures the importance of legislation which shall encourage the formation of Building Associations and the extension of their operations under proper safeguards, and to the need of encouraging investments in such buildings to the largest possible extent.

TAXATION OF INCOMES FROM STATE AND MUNICIPAL BONDS.

WHEREAS, The National Federation of Construction Industries views with solicitude the discouragement of investment in private construction through the freedom from taxation of incomes issued by States and subdivisions thereof; be it

RESOLVED, That this evil should be remedied by the passage of an amendment to the Income Tax provisions of the Constitution giving authority to Congress to tax incomes derived from such bonds on exactly the same basis as other incomes;

FURTHER RESOLVED, That a copy of this resolution be forwarded to the Senate and the House of Representatives of the United States.

WORK OF DEPARTMENT OF COMMERCE.

RESOLVED, By the National Federation of Construction Industries:

That this Federation has observed with the greatest possible approbation the action of the Department of Commerce

in creating and developing the work of the Building and Housing Division of that Department;

That the development of that work has been marked by great intelligence and discretion and deserves the support of everyone having the public interest at heart and the progress of the construction industry.

RESOLVED FURTHER, That this Federation especially approves the work of standardizing building codes now undertaken by the Department of Commerce, and expresses the hope that this work may result in the submission of a standard building code which will protect the interest of the public, relieve investors from unnecessary cost and foster proper lines of building construction.

RESOLVED FURTHER, That a copy of this resolution be sent to the Secretary of Commerce.

SMALL HOUSE SERVICE BUREAU.

WHEREAS, The National Federation of the Construction Industries recognizes the value of the work that the American Institute of Architects is doing, through the Architects' Small House Service Bureau, in making available at low cost to people of moderate means a professional service in the designing, planning and specifying of small homes; therefore be it

RESOLVED, That the National Federation of Construction Industries hereby records its approval of the idea and purpose of such service and offers its hearty co-operation to the fullest extent possible in the furtherance of such service.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,406,460. Multiple Brick Mold. Frank J. Kinzinger, Windsor, Ontario, Canada, patentee.

A multiple mold for concrete bricks and the like, comprising end plates, a series of interposed longitudinal mold forming members each including a vertical base plate and a series of right angle plates secured in contiguous alignment on said base plate, and means for securing the end plates and the mold forming members together.

No. 1,405,574. Brick for Building Purposes. Acheson Ferguson, Belfast, Ireland, patentee.

A double-hooked interlocking reversible building block having interlocking recesses and projections at two opposite sides and made level at the other sides so as to give a horizontal joint when built into a wall, transverse bonding members integral with the blocks and serving to bond together the outer and inner portions of a hollow wall built with the interlocking reversible blocks, the transverse bonding members forming a vertical hooked joint which prevents the passage of damp from the outer wall blocks to the inner wall blocks.

No. 1,405,644. Building Brick. James P. Williams, St. Louis, Mo., patentee.

A building brick comprising a base, the portions of which are in approximately the same plane, a plurality of spaced-apart chambers disposed on said base a cross-web arranged in spaced relation to the base and connecting said chambers, and constituting, with said chambers and base, an elongated air-chamber; and an upright web upstanding from said cross-web in spaced relation to said chambers, the outer surface of said upright web being in approximately the same plane as one of the outer edges of said chambers.

No. 1,404,823. Building Brick. James P. Williams, St. Louis, Mo., patentee.

A "one-handed" building brick comprising side load-sustaining members, hollow throughout their length and having upper and lower mortar-contacting surfaces; a base-web connecting the members at their lower portions; a top-web connecting the members adjacent their upper portions and disposed in a plane below the upper mortar-contacting surfaces of the members; drip-webs depending from the base-web in

spaced relationship from the load-sustaining member; and a central mortar-joint-breaking web upstanding from the top web; the upper mortar-contacting surface of each of the members and of the joint-breaking web being in the same common plane, and the lower faces of the drip-webs being below the plane of the lower mortar-contacting surfaces of the side members.

No. 1,410,729. Refractory Brick. George A. Balz, Rahway, N. J., patentee.

A refractory brick consisting of a body portion and a facing portion relatively shaped to mechanically engage one another and united only by such engagement.

No. 1,411,534. Furnace for Brick and Tile Kilns. Halver R. Straight, Adel, Iowa, patentee.

A furnace for brick and tile kilns, comprising a downwardly and outwardly inclined tube through the wall of said kiln, and having means at the lower and outer end for feeding combustible gases, and at its upper and inner end means for mixing said gases as they enter the kiln.

No. 1,409,953. Ceramic Insulating Material. Joseph A. Jeffery, Detroit, Mich., patentee. Patent assigned to Jeffery-DeWitt Co., Detroit, Mich.

The raw batch of a ceramic material comprising a mixture of sillimanite, a flux and a clay mixture the clay content, when heated by itself, maturing at the temperature at which the ceramic body matures.

No. 1,411,170. Apparatus for Manufacture of Hollow Bricks. August Kahr, Leipzig, Germany, patentee.

In a continuous hollow brick or tile making machine, the combination with a mouth-piece through which clay is expressed; of a cylindrical rotatable core having a clay forwarding recess in its periphery and having means to conduct air to the interior of the clay string during the rotation of said core.

No. 1,409,284. Building Tile. Leonard H. DeFernelmont, Philadelphia, Pa., patentee.

A wall composed of a plurality of tiles directly interlocked both in a vertical direction by immediate contact and in a lateral direction by means of ribbed and grooved interengaging parts on the respective adjacent edges of the abutting tiles, and in which further the adjacent edges on each side of the interlocking portions of abutting tiles are provided with grooves.

No. 1,410,953. Twin-Wall Brick. Thomas W. Pierce, Boston, Mass.; Francis T. Owens, Ridgway, Pa., and Edward M. Taylor, New York, N. Y., patentees.

A reversible channel brick of the kind described, of a width to extend from face to face of a wall, comprising two wall portions each cored longitudinally and united intermediate their height by a central web defining, with the inner faces of the wall portion, a plurality of centrally located air channels.

No. 1,407,173. Brick Conveyor. John Siewiorek, Geneva, Ohio, patentee.

A conveyor comprising a pair of spaced sectional beams, means for uniting the sections thereof, a plurality of freely revoluble rollers journaled between said beams, a conically faced support wheel mounted at one end of said beams, said wheel having a flange on the side adjacent the rollers, means for positively raising and lowering the other end of the beams, and means for retaining the beams in adjustment.

No. 1,408,663. Pottery-manufacturing Apparatus. Richard H. Wainford and Charles H. Darling, Trenton, N. J., patentees.

In apparatus of the class described, the combination of a machine for forming clay and a drying stove having a series of movable ware-boards, means intermediate said machine and said drying stove whereby the movement of said ware-boards is synchronized with the operation of said machine, and means for automatically stopping the operation of said machine at a predetermined stage of its operation.

No. 1,408,550. Brick-Making Machine and Process. William L. Wakefield, Canton, Ohio, patentee.

A brick-forming machine comprising a movable surface provided with brick-forming pockets, means for feeding plastic material thereto, plungers slidable within said pockets, an abutment surface adapted to contact with said movable surface

(Continued on page 494.)



REFRACTORY TREND INDICATES REVIVAL.

FLUCTUATIONS in the supply and demand for iron and steel during the three years past have made a marked imprint on the refractory situation, especially fire clay and silica brick. Charts, recently corrected and revised have been prepared by the Refractories Manufacturers' Association and are reproduced herewith. Changing conditions for 1919, 1920 and 1921 are presented graphically. An innovation has been made over previous charts by adding a line for cancellations. In this manner the line which represents new business is more accurate.

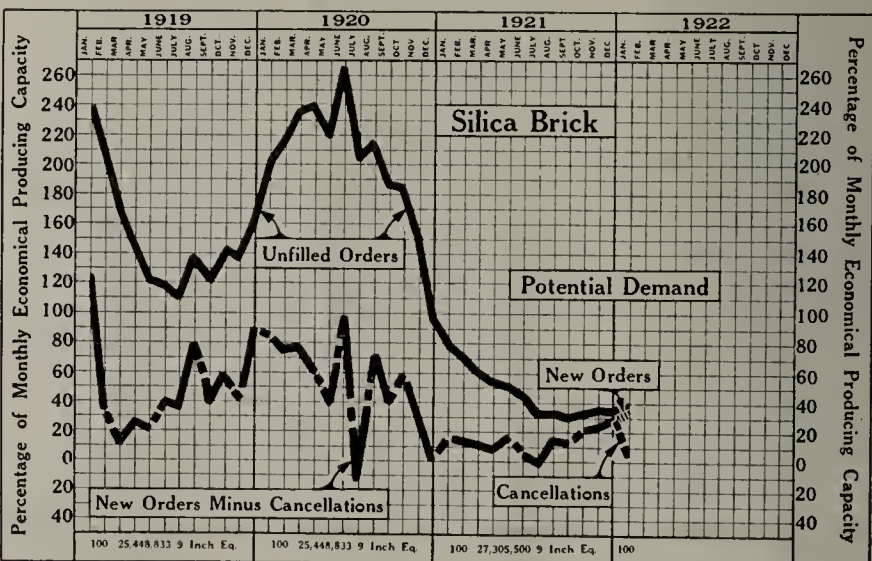
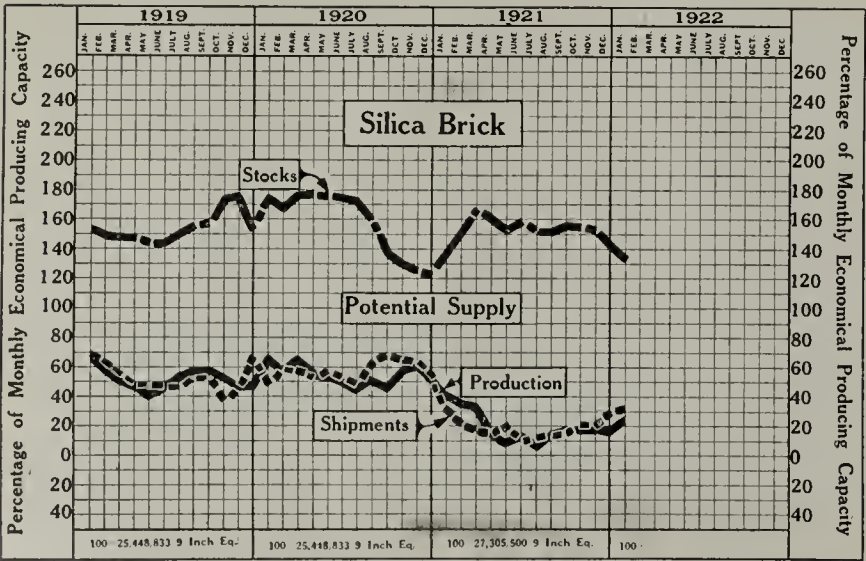
In general, both fire clay and silica brick business trends have followed the same tendencies. Similarly the peak of unfilled orders for both products for the three years was reached during May, June and July, 1920, when this total was between 275 and 350 per cent. of the monthly economical producing capacity. That year 27,448,833 of 9-inch silica brick 78,645,942 of 9-inch fire clay brick were considered to represent 100 per cent. From that time, the unfilled orders dropped perceptibly as can be seen by the charts, to a record low point near the last quarter of 1921. Within December of the same three-month period a slight pick-up was evidenced. In the case of silica brick an unusually low mark was reached shortly following the period of an unprecedentedly high level of unfilled orders in 1920. At this time the new orders were ranging around 15 per cent. New orders for silica and fire clay brick moved upward during January, 1922, while at the same time cancellations fell off at a striking rate.

Changing from a study of the demand for these brick to a consideration of the supply, less sharp contrasts will be

witnessed. Over the expanse of the three years stocks of silica brick were high, hovering between 135 and 180 per cent. The widest discrepancy occurred between the second half of 1920 and the first quarter of 1921. The effect of a stimulated demand no doubt influenced stocks in this period. Fire clay brick pursued the same general course. In 1920 25,448,833 of 9-inch brick and in 1921, 27,305,500 of 9-inch brick were considered 100 per cent. Production and shipments of the two types of brick were closely allied in quantity throughout the entire three years. Separation of the two totals at any one period was only periodic and not extensive. The extremes of production and shipments for fire brick were 25 and 80 per cent. Silica brick traversed in production and shipments between the limits of 5 and 70 per cent. of the monthly economical producing capacity. The persistent manner in which these two lines, production and shipments, have followed each other for the period shown on the accompanying charts is an indication of the influence of demand upon supply. The depression in 1921 sent both lines downward sharply.

Considering the decreased stocks, the increased production and shipments of silica brick, the upturn of new orders and the fall in cancellations of fire clay and silica brick, all of which has taken place in the first month of 1922, the new year promises to clarify the market and to bring a gradual return to satisfactory business. —Iron Trade Review.

The coal strike in England is said to have cost the mining industry a billion dollars. And this, plus the wage loss of a million men, brought no economic return. Surely the strike is one form of waste we should eliminate.



Relationship Between Stocks, Production, Shipments and Orders of Silicia Brick.

Written for THE CLAY-WORKER.

THE PHILADELPHIA BRICK MARKET.



PHILADELPHIA IS EXPERIENCING one of the greatest construction booms in its history. The brick manufacturers report much work and a steady demand for their product. In fact they report much better business now than they have had in the past two years. Charles Siner, President of the Philadelphia Brick Manufacturers' Association, announced at a luncheon of the Philadelphia Construction Conference Group that his association would present bronze tablets at the end of this year to the best three specimens of buildings in which Philadelphia-made brick was used. One tablet would be presented to the owner of the best designed individual building, one to the builder of the best operative dwelling and the third to the owner of the best industrial building. A committee of three architects, of whom D. Knickerbocker Boyd is chairman, will judge the entries. Carl A. Ziegler, architect, who gave a concise talk about early brick architecture in this city, denied the reports to the effect that the houses erected in this city in William Penn's time were built of imported brick.

The reason for the great demand for brick in this city at this time is the two-story brick dwelling, although the demand for the one-story and three-story house is good. So far this year permits have been issued by the Bureau of Building Inspection for the erection of nearly 2,500 dwellings at an estimated cost of over \$10,000,000. These figures cover only Philadelphia proper. In sections directly across the county lines, while not really a part of Philadelphia, but are considered so, dwelling construction is very active. All told, there must be about 1,500 houses in course of erection in the outlying sections. While some are of stucco, the majority are of brick.

Philadelphia's dwelling total so far this year is about 80 percent more than the total for the year of 1920, and is more than the total for the last year. The total for dwelling construction in March, which was 1,356 houses, was exceeded only in the corresponding month of 1916. The total for all classes of construction was the best since 1903.

One of the largest contracts that was awarded last month called for the erection of a fifteen-story hotel to cost \$3,000,000. It will be of brick, steel and stone construction. The

hotel will contain 403 rooms, each with a bath, and construction begins at once.

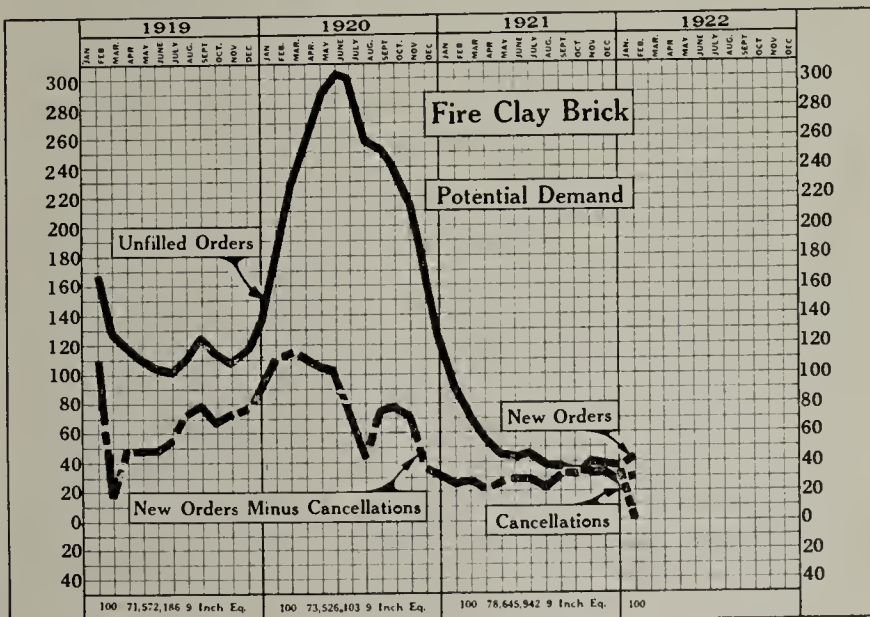
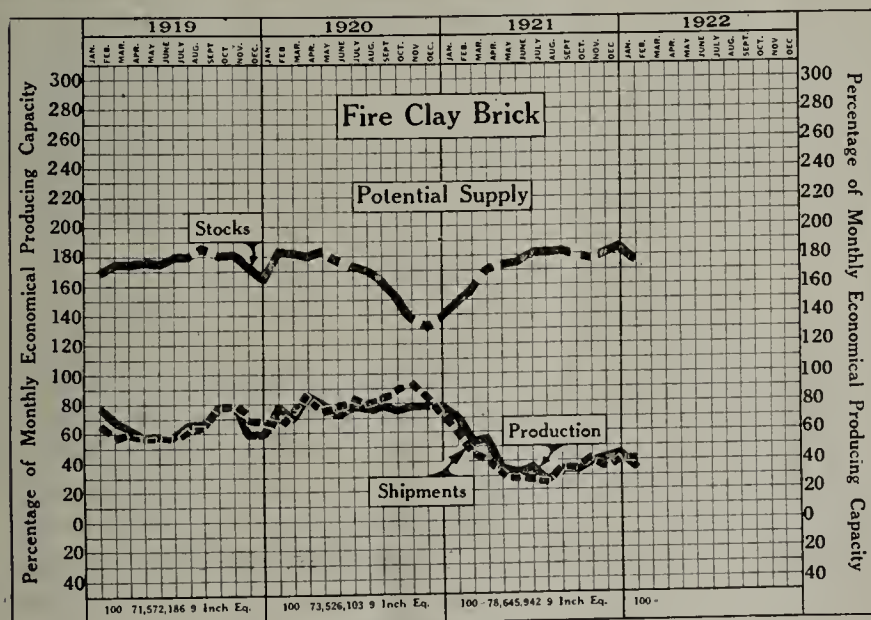
At this time there is nearly \$75,000,000 of construction ready to start. This amount may be exceeded in the opinion of leaders in the construction industry and real estate interests. The figures are based on the amount of work for which permits have been issued, the number of operations ready to start and the numerous plans in progress for contemplated work. The Public Ledger building, costing \$3,000,000, has been started. This will be a companion building to the Curtis Publishing Company's building, which was built about ten years ago. Many of the buildings about to get under way are being erected for nationally known concerns, such as the Atlantic Refining Company, a twenty-story office building; the Fox Film Company, a sixteen-story theatre and office building; the International Harvester Company, a five-story sales and office building; the Sun Oil Company plans to erect a twelve-story office building; the Insurance Company of North America proposes a sixteen-story office building, and the Western Union Company is building a large office structure.

The Operative Builders Association of this city had an exposition in the First Regiment Armory and it is reported that the various exhibits did a business of nearly \$7,000,000. This association is composed of the large dwelling operators, and the majority of them specialize in the two-story brick dwelling. At the exposition numerous plans were posted in a competition for the best dwelling of brick construction. It was open to high school students only, and several hundred designs were received.

The Philadelphia Real Estate Board also had a real estate and building exposition in the First Regiment Armory several weeks following the Operative Builders' show. Every phase of real estate and construction was shown and about 20,000 people visited the exposition.

Many reports have been circulated that there would be a scarcity of bricks in this vicinity. There is no foundation in these reports, however, manufacturers declaring that while they are working at full time to fill the demand, yet they cannot see any cause for a shortage. There is not a great supply on hand, but with consistent working, all of them feel that they will be able to meet any demands. A QUAKER.

It looks to us like it is time for the makers of brick and hollow tile, and the bricklayers, to get a little closer together and to have a little better understanding, because the welfare of each depends in quite a measure upon the other.



Fire Clay Brick Comparisons From Standpoint of Some of the Principal Factors Involved in a Market.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



INDICATIONS POINT to a great deal of building in Evansville and other southern Indiana towns during the coming spring and summer. Already in Evansville there is more construction work under way now than there was at this time last year and a great deal more is being planned. Building permits in Evansville for March showed a big increase over the permits issued during the month of February and it is believed that the permits in April will show an increase over those issued in March. Brick manufacturers say the outlook is quite promising and that they believe the first of May will see more building under way than for several years past. The Standard Brick Manufacturing Company at Evansville reports that business is opening up nicely, a large volume of business being done during the months of February and March. Deliveries in February this year were as large as the deliveries in February and March combined of last year. John Andres, secretary and treasurer of the Standard Brick Manufacturing Company, says that prospective builders are becoming more and more acquainted with the fact that it costs little more to build a substantial brick house and the small additional cost is money well spent in the long run. Plans are being made for the erection of quite a number of brick houses in Evansville this season. The Standard company during the past month or two has furnished brick for the building of several homes at Evansville, Owensboro, Ky., French Lick, Ind., and other points in the tri-state section during the past two or three months. Increased demand for brick has caused the Standard company to make plans for the opening of two of its plants. These plants have been closed down since last December. The East Side plant at Evansville opened during the first week in April and the First Avenue plant opened during the last of March. The two plants together employ a large number of men. "The outlook for the coming season is quite promising," said Mr. Andres the other day. "We are expecting to do a much larger volume of business than last year." Many of the other brick manufacturers in southern Indiana towns are taking quite an optimistic view of the situation and express the opinion that there will be a nice lot of business this year.

The bricklayers at Evansville a few days ago announced that they would continue working this year for the old scale that was paid them during the past year. The scale calls for \$1.07 an hour. It is said that most of the building trades in Evansville and southern Indiana will continue at the old scale. The carpenters at Evansville have continued the old scale of 86 cents an hour.

Fred Zahn, president of the Evansville Bricklayers' Union, is given credit for instituting the "Build with Brick" advertising campaign in that city which was started on April 1st, according to John Andres, secretary and treasurer of the Standard Brick Manufacturing Company. Mr. Andres is secretary of the advertising committee of the Contractors, Material Men and Bricklayers' Union central organization, that promoted the campaign. It was expected that the advertising campaign will result in great good to Evansville.

It is expected the large tile factory at Rockport, Ind., will start in operation within a short time and that the plant will be able to run practically all season.

James O. Freeman, for many years manager of the Monarch Sewer Pipe Company at Brazil, Ind., died a few days ago at Arcola, Ill., following an operation a few days ago at

a hospital at Rochester, Minn. He was well known to the trade in southern and central Indiana and is survived by a family.

The county commissioners of Daviess county, meeting at Washington, Ind., the other day, let the contracts for the building of two brick roads. It is said that these will be the first roads ever built in Daviess county with brick. One of the roads will be one and one-half miles long, while the other will be two miles long. Work on the roads will start within a short time and the highways will be completed this year.

Henry C. Kleymeyer, president and manager of the Standard Brick Manufacturing Company at Evansville, who has been re-elected president of the Chamber of Commerce at Evansville, has worked out many good things for the city during the past year and he has a program which calls for the doing of many things during the coming year. One of the new features of the Chamber of Commerce that has just been announced is the appointment of a traffic manager. The brick and tile manufacturers of Evansville and southern Indiana are vitally interested in this late move.

A HOOSIER.

THE NEXT CHEMICAL EXPO.

Announcements are already out for the next National Exposition of the Chemical Industries at Grand Central Palace, New York. The date is the week of September 11, 1922. Meantime those desiring to know more about it can find out by addressing the National Exposition of Chemical Industries, at 342 Madison Avenue, New York City.

THAT "CONCRETE" DISASTER.

The Clay-Worker for February 15th made editorial use of the collapse of a theatre roof in Washington as the subject of a little moralizing on disasters and the fact that we do not learn more lessons from logic that we may avoid the sadness of disasters. This was referred to as a concrete roof, and no doubt the general public impression gained at the time was that it was a reinforced concrete roof, similar to standard reinforced floors and roofs.

The Portland Cement Association has been very busy since this sad affair in correcting this impression, and they inform us that this was not a reinforced concrete roof, but was a concrete slab roof carried by steel structural members. Therefore they argue that concrete had nothing to do with the failure.

There was no intention to make a slap at the cement industry, the idea being merely to sermonize a little on the lessons we get from disasters which if we would get sooner might help us prevent them. On this point we are still inclined to argue that while we get lessons from disasters the most important lesson should be that of precaution which will prevent their happening in the future.

CONCRETE AND MOISTURE.

The Engineering Experiment Station of the University of Illinois has issued bulletin No. 126, entitled "A Study of the Effects of Moisture Content Upon the Expansion and Contraction of Re-enforced Concrete." It is well enough known that when temperature changes come the coefficient of expansion of concrete is practically the same as steel, so these two materials contract and expand in harmony. Moisture, however, it seems, expands concrete but does not affect steel and therefore the experiments as to moisture.

The bulletin in question contains some of the results of experiments made by Torata Matsumoto, a graduate student

in theoretical and applied mechanics at the University of Illinois, in 1918. Owing to his years of experience as an engineer on harbor works on the Island of Formosa, he was particularly interested in the question of the durability of concrete exposed to sea air and to the conditions found in a tropical climate. It is felt, however, that the results obtained apply to our ordinary conditions and may have many practical applications.

BUREAU OF MINES INVESTIGATIONS.

There is in hand summarized reports of the principal investigations being conducted by the Bureau of Mines covering the fiscal year ending July 1, 1921. These reports include some interesting investigations of clay, including clays of Georgia, clays of Ohio, clays of Washington, the purification of clays and the investigation of ceramic material and so on.

WORK OF A. E. S. C. 1921.

There is in hand a report of the work of the American Engineers Standard Committee for 1921 which gives a list of projects and a list of co-operating bodies together with description of the work under way and the progress that has so far been made. Those desiring copies should write to the American Engineers Standards Committee, 29 W. 39th Street, New York City.

NATIONAL MANUFACTURERS' ASSOCIATION MEETING.

The 27th annual meeting of the National Association of Manufacturers is scheduled for the Waldorf-Astoria, New York City, May 8, 9, 10. The general offices of this organization are 50 Church Street, New York City, and those desiring program and details of convention other than those published in the news and trade papers can obtain them by making direct inquiry.

THE TOLL OF RUST.

When the brick manufacturer who closes down in the winter time and starts operation in the spring again goes to put his equipment in shape and start up he gets his annual reminder that idleness is often harder on machinery and equipment than actual operation. The thing we call rust has a persistent habit of taking toll of all metal equipment, and every spring when we have a round of cleaning up and getting into action again there are probably many resolutions that better care will be exercised next fall in putting the equipment away for the winter. Then most everybody goes ahead and does just as usual, does things which enable rust to take heavy toll of machinery and equipment. Now, while we are talking so much about thrift, economy and the elimination of waste, is a good time to make some real move toward eliminating that form of waste that comes through rust.

INVESTIGATION OF GEORGIA CLAYS.

The ceramic station of the Bureau of Mines in Columbus, Ohio, in co-operation with the Georgia Central Railroad is undertaking a systematic investigation of the clays of Georgia which will include experiments to devise better refining methods and of the testing of physical qualities of different clays obtained. For this purpose a small refining plant is being constructed at the ceramic station a plant handling 500,000 pounds at a time. The kaolins and bauxites of Georgia occur principally in the coastal plains. The railroad lines of the central part of Georgia, it is said, reach about 80 per cent. of

the clays and bauxites of this section. The clays have been sold as fillers but their value for ceramic purposes is little known and this investigation should develop better knowledge of them and open the way to new development in the clay industry of Georgia.

Written for THE CLAY-WORKER.

NOTES FROM DIXIE LAND.



ACTIVITIES IN BRICK, sewer pipe and clay products in general in the Southern field are much better now than they were a month or so ago. With the exception of a retarding influence brought about chiefly by extensive spring rains and tornadoes, outdoor activities in construction lines are very active, partly on large work, but chiefly on medium size building operations. Drainage and sewerage propositions of large moment are causing large demands for sewer pipe. This precipitates with fairly good mercantile conditions, a good demand for those products made of clay, and in turn must shortly precipitate a good activity both in clay pits and brick kilns. It seems the year's labors are just fairly getting started. It must be admitted that in a great many lines it has moved slowly. At Memphis building figures for the first quarter of the year make a good showing, however, for they surpass the first three months of 1920 and double the first quarter of 1921. This year from January 1 to April 1 they were \$1,345,440. More than \$875,000 of this amount was for the construction of dwellings. In the last thirty days 162 permits for dwellings were issued. The figures for the month in 1920 were \$870,850 and for 1921, \$631,440. The Richmond School, valued at \$211,200, was the largest single item. During the month permits were issued for brick veneer dwellings to cost \$467,400 and for 75 frame houses, at a value of \$181,680. The first quarter of 1921 totaled \$1,303,473; for the same period in 1920 it was \$2,123,325. And for this \$3,454,250 up until April 1.

There is a good prospect that the contract for Memphis' newest skyscraper and tallest one will be let early in the spring. This will be built by Brinkley Snowden, of white tile and steel exterior, hardwood and marble interior. Plans by Architects Hanker and Cairns. It will face Court Square.

The contract has just been let at Memphis for a steel, brick and concrete addition to the building of P. P. Williams, at 193 South Pauline street, to be occupied by the White Company of Cleveland, for motor cars.

The contract for the erection of a brick, steel and concrete warehouse addition to the plant of Pidgeon-Thomas Iron Company, at South Main street and East Iowa avenue, Memphis, has been let to Sam Malkin at a price of \$65,000. The building will be 354 feet in length by 165 feet in width.

The Herbert-Fischer Brick Company at Memphis has been adding another unit to its plant in New South Memphis. It is of the type fed with coal from the top instead of the bottom, as is the case with old style kilns. The completion of the new kiln brings the total capacity of the plant up to about 160,000 brick per day.

Fred B. Young of Memphis is general contractor for the addition to the West Tennessee Normal School at Memphis that will cost \$107,241 exclusive of plumbing, heating and electrical work contracted separately.

An exhibition of architectural drawings will be given in Memphis at the State meeting of the architects in June. Walk C. Jones, of Jones & Furbringer, Memphis, is president.

Claude M. Crump, for twenty years a member of Crump Lime and Cement Company, dealers in brick and other materials died in March at his home 1587 Lamar avenue, Memphis. He was 49 years of age. Deceased had a wide circle of friends in business life.

DIXIE.

OF INTEREST TO DRAIN TILE MANUFACTURERS



DRAIN TILE AND CROP YIELDS.

THE TWO ESSENTIAL things to large crop yields and fine products from the farm are proper drainage and proper fertilization. Recently there have come some reports from the older countries of fabulous crop yields which should make inspiring subject matter for promoting the more extensive use both of drain tile and fertilizer among farmers in this country. This hook up of two subjects is made because the underlying foundation of proper soil fertility is drainage. For this reason it would not be a bad idea for the drain tile people to seek a little closer hook up with the fertilizer advocates, because each may help the other and both may prosper from this co-operative effort.

The main thought in mind right now, however, is that of teaching the doctrine that profits from farming come more from large yields per acre than from tilling a large acreage. It is helping produce this large yield per acre that helps make an opportunity for a large use of drain tile. Among the stories coming across from the old countries is one about some fabulous yields of wheat. We are told of yields of wheat in France and Denmark ranging from 40 bushels per acre up to above 200 bushels per acre through heavy seeding and proper fertilizing.

In facing these startling reports we are reminded that our war experience demonstrated that the high yield per acre is better than either a large acreage or a high price per bushel. It is the yield per acre that is the keynote to profit and the only chance for profit when prices are low and times are hard is in getting the highest practical yield per acre.

This is good doctrine for the drain tile people to preach because the better art of farming, that which begets the high yields per acre, quite commonly involves the use of drain tile as a foundation for soil development which may produce these magic yields.

A SEWER PIPE TRAVESTY.

An amusing example of the pitfalls that attend the practice of the gentle art of journalism is quite unwittingly afforded by a recent issue of our contemporary, the Brick and Clay Record, of U. S. A. True, proverbial philosophy warns us that even the gods nod sometimes, but in the sad case before us we fear it will be found that someone high in

office in Chicago absolutely slept! At all events, here are the facts exactly as they have come to hand. In the British Clayworker last December, it will be recalled, we published a truthful little paragraph headed "Last of the Clay Pipe." In this we mentioned that at Bristol, on December 9, the last kiln for making clay tobacco pipes had been lighted in the presence of representatives of three generations of the firm of George & Co., preparatory to closing down the kilns after an existence of 200 years. And we added this explanatory sentence: "The wooden pipe and the greatly increased cost of clay have killed the clay pipe industry."

Now this regrettable occurrence seems to have somehow impressed the imagination of somebody connected with the Chicago publication, for later this paper printed a paragraph about it, headed "Old English Concern Closes Doors." Unfortunately in rendering the facts palatable to American patrons, our contemporary announced that Messrs. George had decided to close down their sewer pipe plant! Then his imagination gave another bound forward, and he added that they had done this "because of the small demand for this product!" Surely that was a grave libel on the good cause of British sanitation! Nevertheless, "although bad begins, worse remains," for he went on to explain: "Up to 20 years ago, the firm had a big South African trade, the pipes being used by European traders to barter with natives for their ivory, gold and other treasures." But what on earth could a native do with a sewer pipe?

—The British Clayworker.

FARM INCOMES.

Taking the statistical returns, it is easy enough to demonstrate that the farmer makes less money than everybody else. The laborer, skilled worker and the professional man all have greater incomes than the farmer. The trouble with these figures is that the farmer counts his income only such money as he receives from outside sources, and does not count food, shelter and all the material products produced and consumed at home. In a word, the farmer has his home and the larger percentage of his food which to the average city dweller without a home represents an outlay of at least half his income. In other words, the average of the incomes of those gainfully employed in other callings than agriculture will have to be cut in half to make them balance fairly with the average in-

come of the farmer, because what is consumed on the farm is not counted as part of the income in the tabulation of statistics. If it were all counted at the same rate that the city dweller has to pay for rent and food stuff it would show the agricultural population on the whole as having a pretty good lead in the matter of annual incomes.

REVIVAL IN SEWER PIPE AND BRICK INDUSTRY IN BUCKEYE STATE.

IN preparation for better business with the advent of spring the clay products industry in Akron, Ohio, is now operating at capacity. Reports from nearly all of the local products concerns show that they have swung into full-time operation, employing their normal number of workmen.

John Starr, treasurer of the Robinson Clay Products Co. said this week that the industry is looking for a big program of sewer work to be started in towns throughout the country this spring. Sewer work, according to Starr, can not be held off much longer.

Many cities and towns, he said, have been placed in the same predicament as Akron. Their development has been greater than their ability to make the necessary improvements and as a result they are far behind with sewer work and confronted with serious sanitation problems.

During the war the municipalities were forbidden to issue bonds for sewer work. After the war the high cost of money prevented them from disposing of their bonds. They now find themselves in a position where they can sell their bonds and as a result the sewer work is expected to be under way soon.

According to Mr. Starr, the clay products industry in Akron and immediate vicinity is in a better position than the industry in other parts of the country.

New Philadelphia, Ohio, has another industry. It is a brick plant owned by W. K. Moore, well-known coal operator. Construction of which was started this week. The plant, which will cost between \$40,000 and \$50,000, will have a capacity of 40,000 brick a day. Mr. Moore expects to be turning out brick and hollow ware within two months. One hundred thousand brick were being delivered at the factory site this week. The most modern, up-to-date, brickmaking machinery has been purchased from the E. M. Freese Co., Galion, and is ready for shipment. The plant will give employment to 100 men.

At the annual meeting of the stockholders of the Continental Clay Co., held at Canton, Ohio, the first of the week, the following directors were elected: Warren B. Ferris, C. E. Berridge, P. A. Berry, Frank H. T. Potter, H. V. Crooks, J. A. Calhoun and A. O. Eberhart. The directors organized after they elected the following officers: Warren B. Ferris, president; Frank H. T. Potter, vice president; C. E. Berridge, secretary and treasurer.

Enlargement of the state brick plant at Junction City, Ohio, so that more than 250 can be profitably employed there is to be started at once by Dr. H. S. MacAye, director of public welfare, he announced this week. New machinery will be installed and new buildings erected at a total estimated cost of more than \$60,000, which was appropriated by the last legislature for the purpose.

Director MacAye said that the most modern equipment would be installed in the Junction City plant and that the work of reconstruction would be under the supervision of J. B. Lorimer, who will be transferred from the London prison farm to Junction City until this work is entirely completed. Mr. Lorimer was in conference with Dr. MacAye during the week and plans for enlarging the brick plant were discussed, and orders for machinery will be placed at once so that it

can be delivered by the time the new buildings are completed.

The demand for brick during the present year will be the greatest since the state began making its own brick. Orders from the highway department already total hundreds of thousands, while orders from Ohio State University and other state controlled and educational institutions plan improvement that will cost many hundreds of thousands of dollars, and present intentions are in every case to use prison-made brick; this includes not only the rough work, but the wire-cut face brick which are manufactured at Junction City.

But even greater supply will be needed for the improvement to be made at state institutions, including the State Hospital in Columbus (for feeble-minded), and the London prison farm, where thousands of brick will be needed as soon as the work can be started anew.

The only fire-brick works in the Dover-Strasburg field, which has been idle for the last several weeks, has resumed operations. Sewer pipe and tile works also are running.

Incorporation papers for the Stillwater Clay Products Co., capitalized at \$150,000, which will manufacture sewer pipe and flue linings, were drafted at Uhrichsville, Ohio, the first week in April. The plant will be located on the holdings of the Walnut Coal Company, between Uhrichsville and Newport. Incorporators are H. B. Galbraith, H. D. Westhafer, J. A. Pearch, D. K. Laporte, H. B. Cameron and J. A. Barkley.

The second Uhrichsville clay plant to be incorporated within a week is the Triangle Clay Co. Within the last ten days four new clay companies have been organized in Uhrichsville.

E. R. Van Ostran, Uhrichsville, was elected president of the Romig Clay Products Company, capitalized at \$200,000, at an organization meeting early this month. The other officers are: John Gardner, vice president; P. A. Romig, secretary-treasurer and general manager. These men, together with E. J. Romig, J. A. Pearch, Alexander Robinson and C. W. Rosel, will comprise the directorate. The plant will be located in the McCreery farm southeast of Gnadenhutzen.

The Mapleton Clay Products Company at Mapleton, near Canton, Ohio, has resumed operations after being idle since November, 1921, according to E. J. Shario, president and general manager. The plant employs 100 men and has a capacity of 50,000 brick per day. The general offices of the company are being moved from Canton to Mapleton.

One thousand sewer pipe and brick plant workers in the Uhrichsville clay district face idleness as the result of an order issued recently by Thomas J. Price of the Midvale miners' organization leaders, which revoked the agreement entered into a week ago whereby the thirteen mines could furnish coal to clay plants. Complaints regarding the agreement were voiced by other miners at a mass meeting held in Uhrichsville. Operators of other mines also complained of discrimination, said Price. The agreement contained provision that the miners could break the pact at any time. The time was fixed at eight days, to enable clay plants to burn brick now in their kilns.

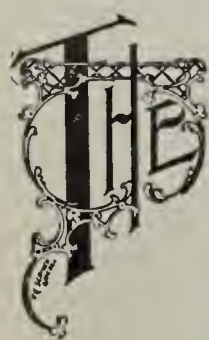
The Midvale plant of the Robinson Clay Products Company, the largest tile plant in the world, has a coal reserve on hand that will last two or three weeks.

The Etna plant of the Mack Manufacturing Company of New Cumberland, W. Va., was placed in operation April 10, after being idle for several months. The Crescent works, operated by the same concern, will be started as soon as repairs which are being made to the machinery are completed. While the Etna plant was idle a number of changes and improvements were made. The position of the brick machines was changed, a new 150-ton clay bin erected, two feeders and three new clay elevators installed and a new hand stoker for the boilers has been put on. The Mack company is engaged exclusively in the manufacture of paving block.

BUCKEYE.

Written for THE CLAY-WORKER.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE BRICK AND CLAY INDUSTRY.



DEPARTMENT OF COMMERCE has just issued an interesting series of statistics relating to the selling prices of common brick on March 1, 1922, in thirty-six leading cities. Following are the figures per thousand: Haverhill, Mass., \$20.00; Fall River, Mass., \$18.50; New London, Conn., \$18.00; Albany, N. Y., \$13.30; Buffalo, N. Y., \$17.12; Niagara Falls, N. Y., \$17.50; Syracuse, N. Y., \$18.00; Fairmont, N. Y., \$21.00; Columbia, N. Y., \$10.50; Pittsburgh, Pa., \$16.00; Erie, Pa., \$15.75; Cleveland, Ohio, \$14.00; Akron, Ohio, \$13.60; Lorain, Ohio, \$14.00; Youngstown, Ohio, \$18.00; Warren, Ohio, \$15.90; Dayton, Ohio, \$17.50; Cincinnati, Ohio, \$16.00; Detroit, Mich., \$16.50; Pontiac, Mich., \$14.40; Flint, Mich., \$14.50; Saginaw, Mich., \$12.00; Milwaukee, Wis., \$12.50; Chicago, Ill., \$11.00; Cedar Rapids, Ia., \$14.40; Waterloo, Ia., \$14.90; Council Bluffs, Ia., \$17.50; Duluth, Minn., \$17.50; Grand Forks, N. D., \$15.00; Redfield, S. D., \$17.00; Sioux Falls, S. D., \$18.00; Kansas City, Mo., \$16.50; St. Louis, Mo., \$16.50; Little Rock, Ark., \$12.50; Shreveport, La., \$15.00; Dallas, Tex., \$11.00; San Antonio, Tex., \$16.00; St. Petersburg, Fla., \$18.00; Tampa, Fla., \$12.45; New Orleans, La., \$11.00; Louisville, Ky., \$15.00; Toledo, Ohio, \$15.00; Sacramento, Cal., \$17.00; San Francisco, Cal., \$15.50; Pasadena, Cal., \$17.00; Seattle, Wash., \$13.00.

In this connection the Division of Building and Housing of the Bureau of Standards has prepared a chart showing that in February, 1922, the prices of common brick at kiln, Chicago, have increased over 69 percent above the 1913 average, and were, in the month stated, at a figure one-third below the maximum price on record in the industry at any time.

The Bureau of Census has made public a bulletin showing the production of clay fire brick, silica brick and face brick in the United States for the months of January and February, 1922. Following are the figures for the two months:

—1922—

Clay fire brick:	January	February
Productionpercent of capacity	38.3	44.1
Shipmentspercent of capacity	39.8	38.2
Stocks, end of month...percent of capacity	176.2	186.8
Silica brick:		
ProductionThousands	6,581	6,116
ShipmentsThousands	8,246	7,263
Stocks, end of month.....Thousands	36,344	35,743
Face brick:		
ProductionThousands	25,331	22,926
Stocks in sheds and kiln.....Thousands	154,285	151,769
Unfilled ordersThousands	31,799	44,513
ShipmentsThousands	14,902	18,392

Officials of the Department of Commerce with whom the writer has talked are at a loss to account for the presence on the New York market of a considerable quantity of brick manufactured in Holland, and which are being offered here at lower prices than are asked for American-made brick of the same quality produced within a few miles from New York City. It is said that a large cargo of Holland brick arrived in New York early in March, probably as "ballast." These brick were sold mostly in New York City, although some are known to have been shipped to Newark and Philadelphia, and Washington construction companies state that Holland brick have been offered here at substantially less than the local product, although no purchases appear to have been made.

The brickyards in Arlington County, Va., just across the "highway bridge" from Washington, had a narrow escape from being put out of business a few weeks ago by the Virginia legislature. At the request of a delegation from Arlington County, both branches of the legislature passed a bill which prohibited "permanent uncovered excavations" exceeding 5,000 square feet in area and five feet in depth within a half mile of a subdivision which has been dedicated and recorded five years prior to the passage of the act. The effect of the act would have been to put all the brickyards in Arlington County, of which there are a considerable number, out of business. A determined fight was made against the bill by the brick manufacturing interests of the county, which has now resulted in a veto of the measure by Governor Trinkle.

According to the Bureau of Public Roads, Department of Agriculture, figures compiled covering the cost of various road-paving materials show that in 68,000,000 square yards of paving constructed with federal aid in all parts of the country in the five years ended December 31, 1921, brick paving cost \$4.10 per square yard. The figures given are as follows: Brick, \$4.10; reinforced cement concrete, \$2.74; plain cement concrete, \$2.57; bituminous concrete, \$2.50; bituminous macadam, \$2.10; plain and surface treated macadam, \$0.95; gravel, \$0.46; sand clay, \$0.18.

These figures cover only the cost of the paving, and do not include the cost of grading, and officials point out that it must not be assumed that roads of the several types can be constructed in any locality at these figures.

The Bureau of Public Roads has had prepared a number of motion picture films showing the construction of brick, concrete and bituminous roads in every detail. These road-building films have been exhibited a number of times and always to interested audiences at various functions here. It is the intention of the bureau to send the films to various points throughout the country.

Testing engineers representing the state highway departments of a large number of the states met with officials of the Bureau of Public Roads here a few days ago for the purpose of harmonizing the specifications for materials used in road construction, and thus make possible the use of brick and other materials from the same source without difficulty. The committee decided on a uniform specification list for crushed stone, crushed slag and gravel for use in brick, concrete, bituminous concrete, sheet asphalt, bituminous macadam and water-bound macadam paving.

Bertram Bruce Lamond, manager of Lamond Bros.' clay products and tile plant at Lamond Station, D. C., was almost instantly killed on April 6, when his trousers leg caught in the edge of geared wheels and he was drawn into the whirling machinery at the plant. Mr. Lamond had been attempting to adjust the clay-feeder and was returning across a series of open gears to safety when he was caught by the machinery. He was well and favorably known all through this section, having been a member of the A. E. F., and receiving promotion from private to a first lieutenancy. He was a high-degree Mason.

ROLLER BEARINGS.

Roller bearings are coming into the limelight of attention again now through their introduction on railway cars to eliminate the hot box and to reduce the friction load. Ball bearings have had the middle of the stage most of the time lately but there is seemingly a big field of possibilities for roller bearings, too, not only on cars and trucks to reduce friction load, but also on heavy machine journals to take on some of the rugged work of which we have a fairly good share in the clayworking industry.

CHAMBER OF COMMERCE OF THE UNITED STATES.

The Tenth Annual Meeting of the National Chamber of Commerce will be held in Washington, D. C., May 16-18, 1922. The headquarters will be at the New Willard Hotel. Information in regard to places of sessions will be furnished later. The meeting of the National Council will be held in the convention hall of the New Willard Hotel, May 15, 1922, beginning at 10 o'clock a. m. Special arrangements have been made for reduced railroad rates; round trip tickets can be purchased if proper credentials are secured. Any one of the members desiring to avail themselves of this privilege are requested to communicate with D. A. Skinner, secretary, Mills Building, Washington, D. C.

ANNUAL MEETING OF THE BUILDING OFFICIALS' CONFERENCE.

The Eighth Annual Meeting of the Building Officials' Conference will be held in Indianapolis at the Lincoln Hotel, beginning Tuesday, April 25. An interesting program has been prepared and a good attendance is anticipated. The sessions are open to the public. Anyone interested in boosting the era of increased building activity now pending will be more than welcome at the meetings.

Friday, April 28, there will be a side trip to Bedford, Ind., the delegates and those accompanying them, being the guests of the Indiana Limestone Quarrymen's Association. For further particulars, address H. S. Brightly, Service Engineer, I. L. Q. A., Bedford, Ind.

SENATORS ENDORSE LOAN FUND PLAN OF COMMON BRICK MANUFACTURERS' ASSOCIATION.

A representative of the Washington bureau of The Clay-Worker talked with Senator Rawson of Iowa and Senator Calder of New York on the proposed plan of the Common Brick Manufacturers' Association discussed at its St. Louis convention. Senator Rawson has for practically all of his life been identified with the brick-making industry and knows the line "from the ground up." Senator Calder of New York is president of one of the largest and most successful construction companies in the United States—a concern which has built upward of 5,000 houses in Brooklyn alone.

Speaking of the raising of a large fund for the purpose of aiding home builders, Senator Rawson said: "It is a fine idea, and I hope it will be put into operation. Anything which will help us get back to stable and normal conditions in the construction industry should be fostered and encouraged by our brick manufacturers; and in this plan, as I understand it, the responsible head of a family will be aided by local brick manufacturers and financial institutions (either bank or building association) to 'own his own home.' Such an enterprise could very well grow into a big institution, as through its successful operation it would be enabled to develop a plan which would not only be a tremendous help to the man who builds, but also a fine stroke for the brick manufacturers who sponsor it and stand back of it. I hope it is put in operation."

Senator Calder spoke in approval of the plan. "There is a splendid opportunity at the present time for some such aid for the builder. I favor all the help that can be safely and legitimately given the man who is working to build and own his home, and the brick people are to be congratulated on taking the step which, if carried out, will help not a little to bring this about. If the construction interests of the country, representing all of the building lines, put their shoulders to the wheel collectively the day is not far distant when

we will be back on the main track which leads to prosperity. And the brick manufacturers have evolved a mighty good idea in their loan plan."

ALTHOMAR.

TO REBUILD PLANT.

Fire of unknown origin which broke out early Sunday morning, March 19th, totally destroyed all the buildings of the Medina Clay Products Company at Chippewa Lake, Ohio, and caused a loss of about \$15,000, which was partially covered by insurance. The plant was owned by D. L. Cassidy, a former resident of Dresden, and Bernard L. Puritan, and it is stated that they will rebuild the plant at once.

TO OPERATE ENTIRELY ON FACE BRICK.

The Dixie Brick Company, one of the large clay-working enterprises of Columbus, Ga., is preparing to devote its plant exclusively to the manufacture of face brick. This company has a very fine quality of clay, and has met with such success in the manufacture of face brick that the decision was reached to operate the plant exclusively as a face brick plant. Additional machinery already has been ordered. The Dixie Brick Company will be prepared to manufacture completely finished face brick, either smooth or rough texture. There is only a limited number of exclusive face brick plants in the Southeast, and this enterprising Columbus company is entering a very attractive field.

BRICKLAYERS REDUCE SCALE TO \$1 PER HOUR.

Ashtabula bricklayers, stone masons and plasterers at a special meeting of the local branch of the union, No. 42, B. M. & P. U., recently established a new wage scale of \$1 per hour, to take effect May 1. The new scale supplants the scale of \$1.12½ an hour, which has been in force during the past two years, and will be in effect until May 1, 1922.

Fifty Ashtabula bricklayers, stone masons and plasterers who are members of the local branch of the union will be affected by the new order. The organization here is said to comprise practically all of the men engaged in that trade in the city.

"The action was taken," stated L. B. Del Motte, secretary of the local organization, "to keep pace with the trend which wages in general have taken during the past few months."

The Ashtabula organization meets annually to set the wage scale for the ensuing year.

THE BOOK OF SMILES.

Many a truth is said in jest. To illustrate, we quote from the front cover of the current Book of Smiles: "One trouble with the U. S. is—we're long on limousines and short on wheelbarrows." Another literary tid-bit in the same issue reads: "After seeing a picture of Mother Eve we understand the meaning of the term 'evening gown.'"

Speaking seriously, the Book of Smiles asks the reader: "Did you get your copy? If not, we have it all ready to mail to you—it's free. Our latest publication contains much practical information for anyone contemplating building a drier. Also much valuable information for anyone operating a drier. Put a copy in your reference file. Just write your name and address on a postal card and mail to the Standard Dry Kiln Co., 1591 McCarty street, Indianapolis, Indiana."

There is other equally serious and informative matter in The Book of Smiles, touching on the merits of the Standard Drier. By turning again to the lighter side we quote: "Modern Divorce Decree—'Wife shall have the key to the victrola and husband the key to the cellar.'"



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

A New Brick Plant at Nucla, Colo.

Editor Clay-Worker:

I am considering starting a small brick and clay products factory here. There will not be a big demand for these products at the present time, but I am sure that when we get the plant under way we will have a good local market. I would like to make dry press brick, hollow building tile, rough and floor and drain tile. Can these all be made economically in one factory? We have plenty of shale and the samples I have had burned are very satisfactory. Will be pleased to receive catalogues and other printed matter touching on the manufacture and marketing of the above products.

Yours truly,

S. M. PRESTON.

South African Firm in Market for Brick.

Editor The Clay-Worker:

One of our correspondents in South Africa is anxious to get into communication with American manufacturers of White Glazed and Salt Glazed Header, Stretcher and Bull-nose Bricks, suitable for facing ovens and bakeries.

We should be pleased if you would pass this enquiry on to about four companies who are in a position to quote for the above lines, asking them to send us their very lowest quotation, together with details of size, packing, etc., to Messrs. Macadams, Ltd., P. O. Box 1410, 49 Kerk street, Johannesburg, South Africa.

In the event of these people requiring supplies, their order would be placed through one of the well-known New York buying offices. Thanking you,

Yours faithfully,

THE BRITISH MAIL PRODUCTS CO. (Export).

London, England.

Thinks Well of Pulsichroming of Brick

T. A. Randall, Indianapolis, Ind.:

Dear Randall—I am very glad to have the possibilities of staining the surfaces of bricks presented to the association by Major Gates, and I expect to see considerable development along this line.

As several said in the discussion, the idea is not new but the machine is.

A number of years ago I suggested staining the sand used in sand mold bricks to get a better color, and one factory put it in operation.

Long before that—nearly thirty years ago, when I was making bricks, we had a habit of developing something and putting it on the shelf for future use when too many others began making the stuff we were making. Thus we advanced from plain buffs to terra cotta shades, grays, buff speckled, and gray speckled. We developed a nice dark red but never used it except for a few jobs at first to see how it would look. Then we used a slip to get a mottled black and dark red. We had no spraying machine and it is my recollection that we

used a lather brush to spray the bricks on the trucks. The results were fine. We made up about 100,000 of them, built three good jobs and shelved the product to be used later. It was never taken off the shelf, however.

We also developed an enameled brick, but that is another story and has no bearing on pulsichroming.

I recall the first convention in Philadelphia—I still have my brick button—Ittner called attention to the various fads that were appearing on the market—citing one job in Philadelphia, which he stigmatized as “horrible” and prophesied that the fad would be short-lived and that the trade would soon return to its senses and red bricks.

We were making “fad” bricks and for a moment he gave me a chill—such a chill that I remember the incident to this day—the convention hall, Ittner, whom I was seeing for the first time, and where I sat, which, as usual, was not in the bald-headed row, as you know. We are today only in the beginning of beautiful bricks. My deepest regret is that I will not be here thirty-five years hence to see what has been accomplished. Oh, well, we accomplished something in our time—buffs, terra cotta, grays, speckled buffs and grays, and rough texture product.

One consolation we have is that Heaven is said to be paved with bricks—yellow bricks—and these are in our line. I may be able to get a job in a brick yard somewhere in the heavenly outskirts.

Yours truly,

ELLIS LOVEJOY.

An Appeal to Members of All Associations.

Dear Secretary Randall:

Having been down in the Sunny South for the last seven years, where the mocking bird calls from the branches of the magnolia tree, and the contented negro sings, as he feels that he is a spoke in the great industrial wheel, and even in the church he is either a deacon or a preacher, leaving nothing for the poor Methodist but the tithe, am desirous to meet once more my brethren of the clay craft; take them by the hand; look them in the eye, and to find out how they fared, so I began to look up where the convention was to be held.

I found, to my deep sorrow and regret, that we were divided into bands. Listen how this sounds in this day, when efficiency is taught to the extent that one scientific industrial expert talks of drawing a stop watch on a gang of brick wheelers, who are working at their best, to determine how much they ought to do in so many hours. I think it is going to the extreme, but where does efficiency come in in the following announcements:

Convention of the National Brick Makers at Indianapolis, Indiana.

Common Brick Manufacturers' convention at St. Louis, Missouri.

Hollow Tile Manufacturers' convention at Chicago, Illinois. American Cermaic Society convention at St. Louis, Mo.

Now, as these industries are closely allied in drying and burning and many other points of similarity, why cannot they all hold their conventions the same week in the same hotel? Their meetings could be in separate rooms, but this arrangement would allow for all to meet and get acquainted without traveling miles in bad weather, taking much time and incurring great expense. Let us apply efficiency to this part of our business as well as elsewhere. Let us all meet together next year.

Yours faithfully,

ROBERT TWELLS.

The Best of N. B. M. A. Conventions and a Fine Trip to the Pacific Coast.

Dear Randall:

Well, we are back home again from our Convention trip, which extended all the way to the Pacific Coast. We stopped

in Chicago on our way home, and wish I could have met you there so as to tell you something of our trip. As you know, the first stop after we left home was at the Claypool Hotel, convention week. We certainly had a grand time there. I think it was one of the best conventions I ever attended. Our next stop was Chicago for two days. We met the rest of our party there, then over the Santa Fe to the Grand Canyon, where we spent three days, taking in the grand sights. Thence to Los Angeles for a week; Yosemite Valley for two days, and San Francisco for twelve days.

Our next stop was Salt Lake City, and after getting settled, we called on our good friend John P. Cahoon, and I tell you he gave us one of the best times we had while in the West. We like Salt Lake City very much, and Mr. Cahoon has a dandy brick plant, and he makes good brick. From Salt Lake City we went to Colorado Springs; next we went to Denver, Cheyenne, and then started on the home stretch, stopping at Chicago, where we were glad to meet Mr. Conway, who told us he was looking for you the next day. We arrived home Tuesday morning, March 4, and Long Island did not look so bad after all.

We think it is a pretty good place to live. Mr. Gaynor, my assistant, had the brick plant in good shape, with the new electric shovel down in the pit digging clay, and the machine turning out brick. Will burn our first kiln the latter part of



Jotham Post, Seeing Himself as Others See Him.

March. We are all out of brick, and there are plenty of calls for brick just now. Looks like a busy season ahead.

Hope Mrs. Randall is quite well again. Mrs. Post is in the best of health, and the only regret in regard to the Indianapolis convention we have is that she was confined to her room most of the week. Love to all of you from us both.

Yours very truly,

JOTHAM POST.

A Correction.

My Dear Mr. Randall:

Please make correction as early as possible of the discussion credited to me on the subject, "Transmogrification of the Common Brick." Judging from the correspondence that comes to this desk, considerable interest has been aroused, and I fear that some of this interest is provided by the very large advantages reported to be obtained from the discussion which has been credited to me.

I do not repudiate most of the statements made by myself in the discussion of Mr. Gates' paper. I do, however, wish to disclaim the following, which appears on page 237 of your February issue:

"The greatest thing is you are getting a stronger, better brick without adding much to the cost."

I cannot believe I made such a statement, as there is no

word of truth in it. The engobe put to the surface of the brick made by the Gates pulsometer affects only the color of the brick and would in no wise affect the strength. The brick would be no better and certainly would cost more.

The use of the pulsometer on Terra Cotta is of undoubted success. The use of this method of coloring Terra Cotta is one of the biggest innovations that that industry has had in the last few years. It would also give effects to face brick which I am sure would be very popular to the trade. I am quite certain that the face brick manufacturers will find the use of this method of giving broken surface texture to their brick to be of value.

I cannot, however, believe that very many common brick manufacturers will find this method of coloring brick to be of any advantage. It certainly will add to the cost of the brick and the common brick manufacturers will find it necessary to do a considerable amount of experimental work before an engobe or stain is found that will fit their clay and will burn in their clamp and Dutch kilns. Those common brick manufacturers whose clays burn to a disagreeable color can alter the colors of their clay by methods that are very much cheaper and which will at the same time give much less trouble in the sort of kilns used in the common brick manufacture.

The common brick manufacturers would be adding cost in the care which would have to be exercised in the setting of the bricks coated by this engobe. The face brick manufacturers' method of setting would not have to be changed because of this engobe.

I really do not believe that this scheme, although feasible technically, will ever be commercially possible by the common brick manufacturers to any large extent. All that I had to say in the discussion credited to me regarding the quality and character of the stain and the feasibility of its application are true. You will notice that I did not discuss the commercial possibilities for the common brick manufacturers.

Yours very cordially,

Columbus, Ohio, April 14, 1922.

ROSS C. PURDY,
General Secretary.

THE PERFECT CLAY SCREEN.

The Dunlap Mfg. Co. of Bloomington, Ill., manufacturers of The Perfect Clay Screen, report that prospects look good for 1922, and, as noted in their ad on page 476, they are specializing on perforated metal for clay plants, as their twenty-five years' experience building screens enables them to offer valuable assistance in the selection of the type of perforation for the different clays and products, and invite those having the least trouble with screens or any one wanting perforated metal to write them.

HOW FAST CAN YOU SAY IT?

A tree toad loved a she toad
That lived up in a tree;
She was a 3-toed tree toad,
But a 2-toed toad was he.
The 2-toed tree toad tried to win
The she toad's friendly nod;
For the 2-toed tree toad loved the ground
That the 3-toed tree toad trod.
But vainly the 2-toed tree toad tried—
He couldn't please her whim;
In her tree toad bower
With her V-toe power,
The she toad vetoed him.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

QUESTION: Will you kindly give me an idea what a brick plant with an investment of \$45,000 should lease for by the year? The plant to furnish everything to produce a finished brick, including teams and wagons for delivery. The lessee to furnish fuel, labor, horsefeed, in fact everything that is consumed. The plant should produce 25,000 common bricks a day, for about eight months of the year. Should the lessee take care of all damage and breakage except natural wear and tear? Thank you for any information along this line.

Answer: The rental should be 8 per cent on the factory investment or value of the factory, exclusive of the land. The lessee should be required to pay all taxes, and keep the factory insured. He should also keep up the physical condition of the factory. In addition to this, he should pay 5 cents per ton royalty for the clay.

QUESTION: We are writing you relative to a whiteness which appears on our brick which has been a puzzle to us, and thought possibly that you might have heard of similar instances where this same condition prevailed. We are expressing to you today prepaid a sample of our brick. When this brick was packed in the box it was practically snow-white. However, owing to the intermittent character of the whiteness, it is possible that when you receive the sample the whiteness will have disappeared. If you find no whiteness, you will find by placing the brick in the sun that this whiteness will appear again. We are bothered with this condition only at times when the coal is wet or when the air is heavy and damp, and as the coal is rather high in sulphur, we are inclined to believe that this residue is sulphur acid or some combination of sulphur and water. This whiteness affects only the brick which are hardest burned, around the fire boxes. A peculiarity of this whiteness is that it does not always appear immediately after the kiln is burned off, and not knowing whether or not the white will appear later, there have been several instances where we have loaded clean brick from the kilns into the car and after the car reaches its destination the brick are found to be practically covered with this whiteness. This is a great inconvenience to us, but we have found that after the brick are set out in the air for several weeks, where they are subjected to the rain, the white then permanently leaves. We have noticed that brick affected by this condition always appear clean in the morning but invariably as soon as the sun strikes them they turn white. We are under the impression that our shale or temper water has nothing to do with this condition, as our lighter burned brick, which are a little distance from the fire pockets, do not show this whiteness at all. Our kilns are built on solid ground and we have never salted our kilns. We would like to know what this whiteness is and also any suggestions

from you as to how to keep it from forming, or after it has formed, how can it be permanently eliminated?

Answer: The white efflorescence described is of rare occurrence. I have experienced it but three times and each time the trouble was due to the coal, which seems to be the cause in the above case.

Dirty, wet, sulphurous coal is the cause, yet I have held that it was not the only cause. My experience with it is that the coal was not only dirty, wet and sulphurous, but that it came from old mine workings which had stood a long time, or pillar coal, which would be the same thing.

It is inconceivable that the sulphur in freshly mined coal from a solid face could develop such a soluble salt, since the sulphur is in the form of a pyrite. All coal contains some sulphur and many factories use mine run, which is none too clean and often is wet. The trouble would be more common if it were simply due to wet sulphurous coal. It would be interesting to know more about their coal.

In one instance I had it analyzed and the chemist reported that it was sodium chloride—just common salt. If this is correct, it is difficult to suggest the source of the chlorine radical. Whether it is sodium chloride, or some other salt, is immaterial. It is a volatile salt which is very soluble and acts like common salt. I do not believe it is developed in the furnace or kiln, but instead that it is in the coal, due to oxidation in the mine.

It is in a finely divided state and very soluble, in fact so soluble that a damp atmosphere, even the humidity of the night air, will dissolve it and carry it into the bricks, only to reappear when the bricks are subjected to drying conditions. Being soluble and largely on the surface, it soon washes off, and that is the end of it. The soft bricks are not troubled with it, or less troubled, simply because they are quite porous and the efflorescence when brought out by drying is deposited in the pore spaces and does not show on the surface.

In the manufacture of salt glazed ware, when the kiln is under burned and the glazing in the bottom of the kiln not far advanced, we get just such a white coating coming and going on the ware, and also where ware not salt glazed is burned in a kiln which has been used for salt glazing we get the same result.

In the instances first mentioned, salt had never been used in the kilns, but in two of the factories pillar coal was being used. The trouble was overcome in one factory by the use of coal from another mine and in the other factory by using coal from a solid face, but from the same mine. Dirty sulphurous coal that has been kept in storage a long time, I think would likely have the same effect, but I do not know from experience.

The vagaries of the behavior of the efflorescence are, I think, easily explained. The coming and going is simply a matter of evaporation and solution. When the atmospheric conditions are such that the bricks are taking in moisture the efflorescence will go into the pores of the bricks with the moisture, but when the atmosphere is dryer than the bricks, the moisture in the bricks will come to the surface and leave the efflorescence on the surface by evaporation of the moisture.

CAREY P. ELLIS.

LABOR LOSS IN STRIKES.

It is estimated that the loss in wages during the past year by strikes would foot up to a total of about \$2,361,000,000, which is practically enough to pay wages to the whole army of unemployed. This is a form of industrial waste that we should seek to curtail. There is not only the loss in wages but the loss to industry and business generally, all of which runs into billions each year and which constitutes a preventable form of waste that we should be getting after.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



CALIFORNIA has reached the point where the increasing population and the swelling volume of commerce are demanding city structures unsurpassed anywhere. The new twenty-two-story Standard Oil office building in San Francisco, while the largest structure so far, simply represents an apex of development all along the line. Around it, on all sides, are springing up new structures, eight, ten, twelve and fifteen stories high, and older structures with proper foundations are finishing up their building possibility. Of course this is not all done in a day, but it is being done, and is being accompanied by the natural increase of large and small apartment and rooming houses, and a number of residence structures that have surpassed all expectation.

And what is true of San Francisco is true on a smaller scale of the lesser centers of the state. In proportion to size, the growth of San Francisco is perhaps but on a par with that of most of the state. And this is no cause of regret to San Francisco, for that very fact is the finest assurance that what has been done certainly has such a backing that there can be no reaction, and the only possible direction for movement is forward.

The significance of all this to the clay-working industry is of more than ordinary import. It is a fact that with the period of the first large building development in California began a new and extensive substitution of cement for brick, for very extensive and excellent cement deposits then became known and were rapidly developed. Not equally known were the deposits of good brick and terra cotta clay, and, in fact, for the finer grades of brick product the demand had not proportionally developed. So cement had its inning. While the brick industry did not fall back, it began to mark time, and to leave to its rival the new leadership in structural development. But it is at such times frequently that an industry gathers to itself those new elements and new developments that make for a greater future. Such has evidently been the experience of the clay-working cult of the State of California. While steel and cement have come into use for framework, the demand for pressed brick, for facing brick, for terra-cotta and ornamental tile have rapidly swelled in such volume as to give to the industry greater and more profitable development than ever before. Added to this is the fact of the rapid education of the public in the use of hollow tile for partition work, and the movement that is now being pushed, with every prospect of great success, to make it to a large extent the building material for home structures, as well as for business and office structures.

The sum total of all this is that the state has been searched over for several years to secure the deposits that exactly respond to the demands of the industry, and this determined effort has met with an encouraging degree of success. It is now a fact established beyond dispute that California can amply supply all the raw materials necessary for brick, tile and terra cotta work of whatever requirement.

Beyond that, the discovery of pottery clays has surpassed expectations. Some persistent and enterprising individuals, realizing that the population and the business conditions were here to justify the effort, have spared no pains to investigate such deposits, and test their actual value. The result has been on the whole satisfactory, so that many porcelain and pottery projects are under way; though, of course, some of the finer clays have not yet been found.

In all this, much valuable assistance has been rendered by the State Geological Department, for the policy of the state has been to facilitate the development of all these natural resources. Their statistical department shows that for 1920, the brick and building tile industries had recovered from the war-time restriction, and had reached the maximum value of \$5,704,000, and that the pottery clay products had increased

to \$3,923,000, and the official in charge of this department, Walter W. Bradley, states that the completed tabulation will show a very considerable increase, while the most casual reading of the daily press shows that the year 1922 will in all probability prove a record year.

As interesting illustrations of the various advances of which we have spoken, of the effort to open new fields, and give to the trade the utmost of what it calls for, we cite a few conspicuous cases.

Some time ago the State Mining Bureau announced that there were at Cardiff, in San Diego County, valuable clay deposits, well worthy of investigation. The clayworkers of the south are a live bunch, and it might be well for some others of their brethren to imitate their example. The Los Angeles Pressed Brick Company followed up the investigation. The result was that they found a fine grade of material from which to supply their needs for fine face brick in color effects for use in residential and commercial building construction, and the immediate construction of clay bins to the capacity of 18,000 tons, and preparation for the immediate enlargement of their supply of surplus finished goods, to be prepared for any emergency.

The Angelus Pottery Company, also of Los Angeles, has for several years been inspecting every possible lead, to locate a superior clay for use in their work of producing semi-porcelain and hotel vitreous ware. They are beginning to receive orders from many parts of the country, and have felt much incentive to obtain an improved quality of clay. This they have found in San Bernardino County, and a new company has been organized to exploit the same under the name of the Norbell Clay Company.

The Steiger Vallejo Brick Company, A. W. Wehe, secretary, has been pushing a very successful drive to sell stock for the completion of a new plant at Vallejo. As they seem to have abundance of business in view; and the general development of the building boom is speeding up more and more, it is understood they have found ready market for their stock.

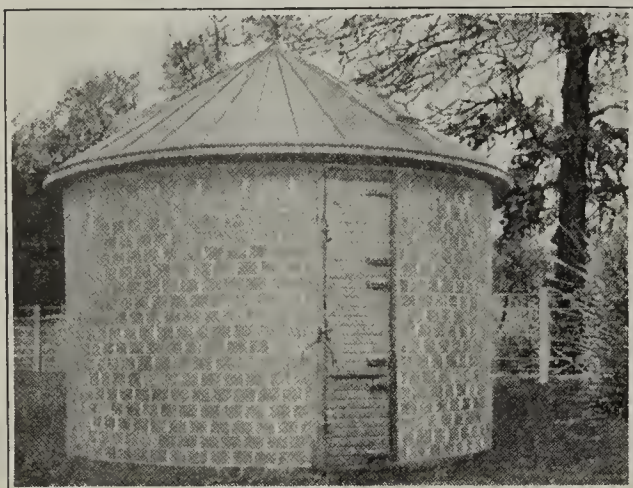
The growing demands of the market are also leading to enlargements, improvements of equipment and concentration and consolidation of plants, for the purpose of greater efficiency and greater output.

The Remillard Brick Co., besides reinstating an old yard that has been idle for some time, has, under the management of their new superintendent, J. H. Canoles, been renovating the entire plant, rebuilding its kilns and installing new machinery, preparatory to increasing the output of the plant.

The Knowles Pottery, at Santa Clara, has received its last consignment of machinery from the Hendy Iron Works at Sunnyvale, for the completion of its plant. The consignment consisted of a plunger, three agitators and a filter press weighing 1,800 pounds. Contracts for the oil and steam line have been let, and these are being installed. Work is progressing on the drying room and one revolving dryer has already been installed. Saggers are being made, and 3,000 will be ready to go into the first kiln as soon as it is ready for firing.

Frank Costello, head of the California Pottery Company, announces the consolidation of the Oakland plant with that at Merced. The Oakland plant employs about seventy-five men, but at Merced they will be closer to the base of supplies, thus effecting an economy in production. They will increase the capacity of the Merced plant to sixteen kilns, and expect to make it the largest on the Pacific Coast. To aid in the completion of the plant, they are conducting a stock-selling campaign.

An interesting episode in brick history was the tearing down of the old United States Assay Building in San Francisco. It was a brick structure, built in 1850, and had weathered the earthquake and fire. Some interested investigator found that a large portion of the brick of which it was composed had been brought from Sacramento, thus indicating how long ago the industries of the Sacramento Valley, and the brick industry of California had made its beginning.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

TILE ASSOCIATION DOINGS.

THE HOLLOW BUILDING TILE ASSOCIATION is now in its fourth year of constructive activities. This makes it one of the youngsters of the clay group. But taking its doings as a criterion, it is a husky youngster. Moreover, its distinct progress bespeaks live officers with broad vision as well as an active membership that is responsive both in financial assistance and in active personal co-operation. And now for the first time the south is getting full recognition in this work and the association has crossed the Ohio river for its new president, J. T. Howington, of the Coral Ridge Products Company, Louisville. This is not only a fitting recognition of the sterling qualities of Mr. Howington, and a proper response to his active interest in the good work of the Hollow Tile Association, but it should bring a more active interest on the part of the south country in the hollow tile division.

ENLISTING THE RETAIL DEALER.

The Hollow Building Tile Association has centered quite a lot of attention on developing a closer connection between the manufacturers and the retail dealers. This is a good step in the right direction, and it should be followed by the individual manufacturer taking active steps to enlist the interest and co-operation of dealers within his territory. The manufacturer should not merely make the rounds and call upon the dealers and supply them with literature, but he may well follow a line of service that the roofing people are profiting by, and that is getting from the dealers a list of prospects in the community, circularizing these direct, then have a further follow up. Have the manufacturer or someone representing him in a sales capacity make the rounds of the dealers, go out with them and help develop sales. This will not only mean more business at the time, but it will mean also the awakening of more active interest on the part of the local dealer that will beget more business in the future.

BRICK, BLOCK AND TILE.

Sometimes some confusion may arise as to what is meant by brick, by block and by a tile. And the confusion is not relieved much by a study of definitions in standard dictionaries. It is custom which really makes meaning as well as law, and by studying customary terms and expressions for a while we can get a very logical view of these terms. The term brick has been associated with a product made of clay and burned or baked for so long that this should be regarded as its meaning, a brick made from other substances such as lime or cement as the bonding unit should be qualified by

being called a cement brick, or sand-lime brick, and so on. Block and tile are terms which do not convey of themselves a sufficiently clear meaning, therefore they should be linked up with other qualifying words. The Hollow Building Tile Association did a good stroke of business when it declared the official term for the hollow clay product as a hollow building tile. Drain tile should be qualified as such, and it is time for some more clearly qualifying phrase for tile used in surfacing walls and floors. The clayworking industry has predominated enough in making brick that this word should stand alone, and stand out clearly as meaning a product of burnt clay. Other clay products and brick shapes made from other materials should be qualified with some descriptive terms.

HOLLOW BUILDING TILE LITERATURE.

The Hollow Building Tile Association distributed last year, according to the annual report of the secretary, 253,168 pieces of literature. The biggest item in this, constituting nearly half, was plan folders, and the next biggest item was the brown sheet describing plans. The detailed report of literature distributed during the past year shows the following:

Plan Folders	112,291
Envelope stuffers to Dealers.....	49,362
Brown sheet describing plans.....	56,794
Hog House Folders.....	7,335
Manuals	7,174
Farm Books	7,140
Garage Books	3,634
Price Lists	5,128
Home Books	2,039
Handbooks	2,041
Building Codes	230
	253,168

The work last year was confined merely to literature already designed and in hand, but it is realized that there is a need for additional literature, therefore a new sales manual is being developed, and the plans include getting out a number of special booklets as early as practical covering the use of hollow tile in churches, school houses, apartment buildings, commercial buildings, factory buildings, mushroom houses, houses for storage of trees and shrubs, and so on.

SELLING THE HOLLOW TILE IDEA.

The officials of the Hollow Building Tile Association recognize that one of the great needs of the day is a better understanding of the hollow tile product. This brings to the front the question of salesmanship and how to more effectively put

the hollow building tile idea across. The answer to this takes a two-fold form. One is that of exploiting, and the other is that of service.

Hollow building tile, being one of the newer of the clay products in its present usages, is not so well known as brick. Indeed investigation indicates that not only is the general public lacking in specific information as to the qualities and of the extent of practical uses of hollow building tile, but even building contractors and architects are often backward about taking up with this product simply because they are not clearly enough informed about it.

This means that it is not enough for the association to carry on a persistent campaign of advertising and of letter writing, but the individual manufacturers should themselves get busy in their own community. Every manufacturer should make it a point to see every architect in his trade territory and every contractor and builder, and then to carry on the work of exploiting his product among the farmers and to the general public.

Secretary Sturtevant in his annual report told of an impressive instance of a man who refused to believe that there was no market with the farmers. So he rolled up his sleeves and went out among them with the result that in 1921 he sold 25 hog houses and realized a price for his product above the average in the open market. This is illustrative of what can be done in local communities by aggressive work on the part of individuals. They can not only carry on effective exploitation, but they can follow it up with sales service and thus enlarge their own market without going out in competition with others so much. And if enough of them do this it means a wide increase in the consumption of hollow building tile and that, too, without crowding out any other clay products. It means the development of new business.

DIVERSITY IN CLAYWORKING.

WE WILL NEVER have unanimous agreement on the question of diversity in clayworking. There are some who will see success in a diversity of products, and there are others who will seek it through concentration and specialization in a given product, and there will be others in between. Perhaps, too, it is the in-betweens who strike the happy medium.

One reason for this question of diversity having more interest than usual now is found in the high freight cost of wide distribution where a clayworker specializes in one or two products only. Broadly, the nearer a clayworker can come to making the full line of clay products required in his community the bigger he can build his business and at the same time lighten the burden of freight and making deliveries to consumers. In short, diversity helps localize trade and this, together with the ability to make mixed shipments, is a factor worth consideration right now.

The four products of construction which may well enter for consideration of this matter of diversity are brick, hollow building tile, drain tile, and roofing tile. In some localities perhaps some refractory products, sewer pipe and floor lining may also enter. The main gain in diversity is in being able to concentrate at one plant and to serve better the entire needs of the community. Whether or not this will outweigh the advantages of specializing and of letting others specialize and ship in their products is one on which we will never all agree. It is a question, however, that may well be given thoughtful attention because sometimes it will be found that through diversity is the way out of congestion and trade depression and the escape from burdensome freight costs in making deliveries.

CLEVELAND'S GREAT BUILDING EXPOSITION.

ONE OF THE most interesting features of the million-dollar American Building Exposition to be staged in Cleveland's new public auditorium for eleven days, beginning April 22, will be a public vote on the best home costing less than \$25,000.

The contest will be conducted by the Cleveland branch of the American Institute of Architects in a large special booth. Home owners have been invited to send in photographs of their residences. These will be enlarged to a standard size and each visitor at the exposition will be invited to cast his ballot for his choice of the three best.

A committee of architects also will select three homes according to its own standards and the six home owners, selected by public vote and the committee, will be awarded bronze medals designed by local art students.

Preparations for the exposition, which has three times been postponed on account of the delay in opening the auditorium, are going ahead on a mammoth scale, according to Managing Director Ralph P. Stoddard. Mr. Stoddard also managed the first building show in the country, held in Cleveland in 1916.

Seventy-five thousand square feet of space in two floors of the huge auditorium will be filled with exhibits representing every single branch of the building industry from the building and loan companies to floor finishers.

National associations of every variety will be represented in large spaces at the exposition. The Southern Cypress Association, for example, has engaged space for a huge display. The Common Brick Manufacturers' Association plans a surprise. Other organizations to be represented include the Southern Pine Association, Arkansas Soft Pine Bureau, Oak Flooring Manufacturers' Association, Heating and Piping Manufacturers' Association, Cleveland Board of Lumber Dealers, Cleveland Builders' Supply and Brick Co., the Builders' Supply Board and the Furniture Dealers' Association.

The latter organization alone plans to exhibit a fully equipped home, furnished along the latest lines. Another model home, to be exhibited by the Fixture Dealers' Society and the Cleveland Electric Illuminating Company, will be equipped electrically according to the most recent standards. Four other complete homes will be built within the auditorium structure—two of these valued at \$25,000.

Among the spectacular exhibits will be those designed by large realty companies who plan to make exact models of their properties. Probably the most magnificent of these will be an exhibit by the Van Sweringen Co. showing its own rapid transit development into Shaker Heights—a large suburban development, together with plans for a new Cleveland union passenger station which it has undertaken to build.

A BOOK ON COAL.

A lot of things have been said about fuel and economy in fuel, but so far there has been but few books available which tell us about coal in a practical manner and furnish information that is of value to those buying coal. Now we are being offered a publication of this kind in the form of a coal manual prepared by F. R. Wadleigh, which gives in simple language what is said to be information that a coal user needs to guide him in the purchase and use of coal. It ought to be a useful book for the clayworking industry, which is, next to the metal industry, the largest user of coal in the country, since having it for reference should pave the way to more intelligent buying and using of coal.

The title of the publication is, Coal Manual, by F. R. Wadleigh, 184 pages, four and one-half inches by six. It is published by the National Coal Mining News, Cincinnati, Ohio, and listed at \$2.50 in cloth binding and \$3.50 in leather.

Written for THE CLAY-WORKER.

THE SITUATION IN NEW YORK.



GREATER CITY SHOWS marked activity along residential construction lines. The totals to date have been very large, and by the number of inquiries being received by all connected with the construction industry these totals will be outdone by spring construction. The number of individual operations contemplated is very large. Most of the architects and engineers are very busy. Contractors are "more than busy," and in many cases the days are too short to care for all the work that is to be figured. Much of this work is going ahead, while there is some that is dragging, only waiting for sufficient confidence in the prospect as to stability of prices.

The favorable attitude shown by the legislature on the recommendations of the Lockwood Housing Committee, which would allow insurance companies to invest up to 10 percent of their total assets in the erection of new dwellings, is making for active work of this class. Already one big insurance company has plans under way for the investment of several millions in this way. All these things, while not large, have a direct bearing on the future, which at present, gives every indication of being very bright.

Much activity is to be seen in the retail brick market. The wholesale end is a trifle slow. Replenishing on the part of some is but of small moment. Dealers are absorbing their stocks for present operations, with many putting off replenishing until the spring supplies are available.

Prices are steady in the wholesale end at the \$17 level in cargo lots, alongside of the dock, with the delivery price at around \$21. Up-river stocks are low, and such as are available are being rather closely held due to the condition of the river.

Quotations are being made on Raritan brick, something that has been out of this market for a number of months. There has been quite a little material brought into New York by rail of late. The wholesale price of this material is around \$20, with an active market prevailing at present. Staten Island brick is coming into notice, and a number of cargoes have been absorbed within the past few weeks. This class of brick brings anywhere from \$17 to \$19 in wholesale lots.

Inland manufacturers are sending in their products by rail with a number of loads being received every day. These find a ready market and but few, if any, are left over at the close

Face brick are moving out with much rapidity, with a slight tendency toward an increase. Many of the large dealers are very active with inquiries. In some cases, this market can be called almost a feature. It is reported that orders placed for spring delivery from Pennsylvania and New England yards are sold ahead and somewhat resemble a stiffening in price. Only a little surplus stock is available, as many of the smaller plants that gave a supply to this market are closed down for winter repairs. The prices quoted are around \$45 on reds; buffs are about \$50, with grays holding around \$55. The darks are holding much demand, with a steady call being felt for the lighter shades.

Hollow tile in the four-inch size is quoted around 17 cents, with six-inch at 19 cents, which are the sizes generally called for the interior work in this locality.

The Rosenthal China Corporation has been incorporated with a capital stock of \$10,000. The company proposes to manufacture china ware products. This new company will operate in conjunction with another company organized by the same interests, to be known as the Continental Ceramic Corporation. Mr. L. E. Hellman, V. I. Weldon and W. S.

McKay head both of the companies. S. F. Hartman of 120 Broadway is to be the agent in charge of both companies.

Maddock & Miller and Herman S. Krepper, Murray street, dealers in china ware products, have leased a six-story building at 39-41 West Twenty-third street as a new location for company. The present establishment will shortly be removed their company. The present establishment will shortly be removed to the new headquarters.

Steams & Holmes, Inc., Syracuse, N. Y., recently organized with a capital of \$40,000. This new company proposes to manufacture tiles for mantels and other purposes. The company is headed by G. D. Steams and W. S. and C. H. Holmes. Mr. J. G. Smith, First National Bank Building, Syracuse, N. Y., represents the company.

The Monumental Mound Company, Inc., of New York City has been organized for the manufacture of monuments, terra cotta and other products. Mr. W. D. Bosler of 511 West Eighty-first street, New York, is the head. The capital is \$100,000.

The Duffney Brick Company, Mechanicsville, N. Y., recently made application for increase of capital stock from \$100,000 to \$810,000.

A. L. B.

NEW BRICK PLANT NEAR DOVER, OHIO.

Plans are under way for a new brick and fire-proofing plant, the expected incorporation of same to be on the basis of \$150,000. It is expected that a modern plant will be erected with a daily capacity of 30,000 face brick. The location will be on the Weinsz farm, one-half mile west of Dover, Ohio, probably consisting of 140 acres underlaid with shale and fire clay. The present plant of the Baab Bros. will be used to make the brick for the new factory and will then be dismantled. Those interested in the new plant are Louis, Nicholas and Charles Weinsz and Adam and Louis Baab.

UP-TO-DATE BRICK PLANT IN BLUE GRASS STATE.

One of the largest and most up-to-date brick plants in the United States will be erected soon at West Russell, Ky., according to statement made by Clyde Turley of Ironton, O., president of the Kentucky Refractories Corporation, which will build and operate the new factory. It is to cost \$375,000 and will employ 175 men and manufacture from 75,000 to 100,000 clay units, including brick, fire brick, furnace linings, etc. A. J. Ivey of Covington, Ky., is secretary-treasurer and R. T. Hipp is general manager. The company operates a plant at Massillon, O.

ROOFING TILE AND POTTERY PLANTS OPERATING TO CAPACITY.

The industrial conditions, so far as the clay product manufacturers' interests are concerned, are splendid in Perry county, O. There the plants of the Ludowici-Celadon Tile Company and Liberty China Company, New Lexington; Junction City Sewer Pipe Company and Rush Creek Clay Company, Junction City; plants No. 1 and 2 of A. E. Hull Pottery Company, the Star Stoneware Company, plant No. 1 and 2 of Burley & Winter and Crooksville China Company, Crooksville, O., are operating on full time basis.

NEW BRICK PLANT AT STONE CREEK, OHIO.

The plant of the Stonecreek Brick Co., Stone Creek, Ohio, will be completed and in operation by Decoration Day, according to the belief of the president, A. C. Marsh. From fifty to sixty men will be employed at the start. William Arehart, formerly superintendent of the Hydraulic Press Brick Co. at

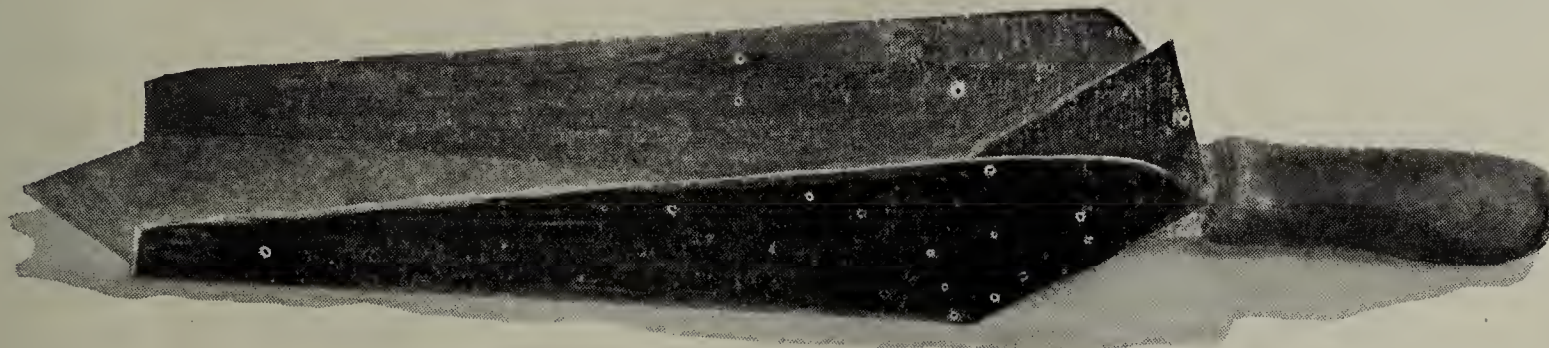
Roseville, Ohio, is the new superintendent. The officers are: President and manager, A. M. Marsh, New Philadelphia, Ohio; assistant manager, J. E. Smith, Stonecreek; vice-president, F. J. Huff, Dover, and secretary-treasurer, W. P. Marsh, Stonecreek.

LABOR SAVING DEVICES

After Being Used for Many Generations, the Bricklayer's Trowel Has Been Improved by a Yankee Inventor.

THE THING which has made this country famous and rich is labor saving devices. No other country in the world has developed machinery and mechanical devices to do the work of men in comparison with the development here. And it was not all done in the past, there is quite a lot of it to be done in the future if we would hold our position and keep setting the pace for the rest of the world.

One thought we should keep in mind, too, is that labor saving machinery and devices lead to higher wages and furnish more work. Wages are maintained at a high level almost in proportion to the progress we make in labor saving machines, and the more progress we make of this kind the more work there is to do because new things call for industrial enterprise. This should be kept in mind because there is some advocating of the doctrine that machines and labor saving devices may deprive men of their means of livelihood.



The Mann Patent Trowel, With Which Bricklaying May Be Speeded Up and Cheapened.

We hear a little of this in connection with that new trowel proposition to speed up bricklaying, that it does not meet with favor among workers because there is a fear it may curtail their work. This is rank foolishness. It is the kind of foolishness that led brickmakers to dump into the Camden River the first power driven brick machine invented by Mr. Adams. They thought the brick machine was going to put them out of business and so they tried to destroy it, a foolish course. Instead it emancipated them from hard manual labor. The same thing has occurred in nearly every case where labor-saving machinery has been introduced. The Mann patent trowel may at first be opposed by skilled bricklayers who labor under the same foolish notion that it will put them out of business. Instead of doing so it will make their work easier and faster and so add to the amount of brick building and prove an advantage to them in the end. Any labor saving device that will speed up bricklaying will ultimately prove beneficial to the bricklayer himself for it means in the final analysis, steady employment and less manual labor.

The Mann patent trowel which is illustrated, used intelligently, will speed up bricklaying and so lower the cost of brick construction. This will mean more brick building so the brick layer, as well as the ultimate consumer, will profit by its introduction and use. For further particulars, see ad on page 490, or address The M. P. Trowel Agency, 213 Hudson street, Indianapolis, Ind.

CLAY WORKERS STRIKE IS ENDED.

After a two-months' strike, clay workers employed in the F. R. Carter brick plants, Peoria, Ill., are again at work. The agreement includes the union shop, eight-hour day, check-off system and a 40-cent minimum.

ROLLED EDGE PREVENTS CHIPPING OF HOTEL CHINA.

Tests carried out at the United States Bureau of Standards indicate that the design of the rolled edge and the angle of inclination of the rim of hotel china plates has as much effect on the ability to withstand chipping as the properties of the body from which the plate is made. The glazes now in use appear to be sufficiently well constituted chemically to withstand the alkaline solutions employed in dish washing.

RESEARCH IN BRICKLAYING.

THE WONDERFUL things accomplished through research work in the making of clay products should perhaps long ago have moved us to another line of research, and that is research in brick laying. At first this may seem outside the scope of clayworking proper, but it is not. Future welfare and progress of all the clayworking industries which belong to the structural division depends considerably upon the progress in brick laying. In short our technical research is not complete until it includes the full

range of activities from getting out the raw material and converting it into products through to the laying of these products where they belong in buildings. It is important in the progress of the clayworking industry to make progress in brick laying methods. In a word, there is a great call today for the technical people of the industry to turn their attention to research work in the use of brick and hollow building tile and so on. The Prepared Roofing people have already set a splendid example in this line of work. They have a technical committee which has included in its activities the preparation of standard directions covering all the details of selecting and laying their roofing products. The sooner the clayworking industry gets busy doing something of the same thing the better will be the chance for rapid progress.

PAY DIVIDEND AND ELECT OFFICERS.

The Ironclay Brick Company, Ruggery building, Columbus, Ohio, declared a 6 per cent dividend recently. Business is reported as fairly good, despite the general slump in building. David Lehman was promoted from assistant manager to sales manager. W. D. Bricknell was chosen president and treasurer; J. M. Adams, secretary and general manager, and Ralph McCullough, auditor. The company has face brick plants at Shawnee, several common brick plants at Columbus and also acts as jobbers for other clay products.



MANY SIZES OF PAVING BRICK ELIMINATED.

FOUR months ago there were 66 types and sizes of vitrified paving brick being manufactured throughout the United States, specified by engineers and used in paving streets and highways. Today there are only seven recognized types and sizes.

This elimination comes about as the result of co-operative action on the part of engineers representing the principal national engineering organizations, the Bureau of Simplified Practice of the United States Department of Commerce, and representatives of the paving brick manufacturers of the United States. It comprises the first concrete results of Secretary Herbert Hoover's campaign to eliminate waste in industry by eliminating excess and needless varieties.

At the first meeting of representative producers and buyers held November 15, 1921, in Washington, only 11 of the 66 types and sizes were retained. At that time a permanent committee was appointed to consider further eliminations and to influence the general acceptance of the recognized types and sizes.

The permanent committee held its first meeting in Washington, March 27, and organized by electing E. J. Mehren, editor of Engineering News-Record, chairman, and H. R. Colwell, of the Department of Commerce, secretary. Organizations were represented as follows:

W. A. Hull, Bureau of Standards; Will P. Blair, American Society for Testing Materials; Col R. Keith Compton, Federated American Engineering Societies; M. B. Greenough, National Paving Brick Manufacturers' Association; L. C. Herrick, American Association of State Highway Officials; E. W. McCullough, United States Chamber of Commerce; W. M. Pierce, United States Bureau of Public Roads, and W. A. Durgin, chief, Division of Simplified Practice, Department of Commerce.

The American Society for Municipal Improvements was represented by Col. Compton in the absence of G. F. Fiske, the society's regular delegate. The absent member of the committee was William D. Uhler, American Society of Civil Engineers.

The committee was informed that the following organizations already had formally approved the first eliminations: National Paving Brick Manufacturers' Association; American

Association of State Highway Officials; American Institute of Architects; American Ceramic Society; Engineers' Club of Columbus; American Society of Civil Engineers; the Departments of Agriculture, Commerce, Interior, Navy and War.

After considering new data as to total shipments of vitrified brick for 1921, the committee voted unanimously to eliminate the following sizes:

Vertical Fiber Lug.....	3	x4	x8 1/2-inch
Vertical Fiber Lug.....	3 1/2	x4	x8 1/2-inch
Wire-Cut Lug Hillside.....	3 1/2	x4	x8 1/2-inch
Repressed Lug	3 1/2	x3 1/2	x8 1/2-inch

The following remain as the seven recognized types and sizes:

Plain Wire Cut.....	3	x4	x8 1/2-inch
Plain Wire Cut.....	3 1/2	x4	x8 1/2-inch
Repressed Lug	3 1/2	x4	x8 1/2-inch
Wire Cut Lug.....	3 1/2	x4	x8 1/2-inch
Wire Cut Lug	3 1/2	x3 1/2	x8 1/2-inch
Wire Cut Lug	3 1/2	x3	x8 1/2-inch
Repressed Hillside	3 1/2	x4	x8 1/2-inch

The committee decided that with four eliminations it had proceeded as far as was desirable until there were further reactions from producers and consumers. It was therefore concluded that no further eliminations would be considered until March, 1923, at which time data on 1922 shipments would be available, to serve as a guide.

DEPENDABLE HIGHWAYS.

Under the above caption, members of the National Paving Brick Manufacturers' Association are receiving frequent bulletins containing valuable information relative to the work of the N. P. B. M. A. A recent issue is devoted largely to testimonials of city engineers, highway commissioners and others who have noted the durability and other excellent qualities of brick pavements. As an example, T. W. Barrally, City Engineer, Tonawanda, N. Y., says:

"About thirty-one years ago the writer was City Engineer of North Tonawanda and designed brick pavements for many streets. Today it is the source of great pleasure and satisfaction to find all of these streets still in use and carrying large volumes of traffic. In 1920 county authorities repaved a 27-year-old brick street which had failed through lack of foundation and drainage, but not from any defect in wearing

quality of the brick. We purchased enough of these 27-year-old brick to build a short length of city pavement, turning the brick and making a street apparently as good as one laid with new brick. Should this street last twenty-seven years, as we have reason to expect, we shall have brick carrying traffic fifty-four years. 'The———pavement substituted by the county for the brick already is showing signs of distress and will not be in use as a surface five years.'

There are several other equally interesting recommendations for good brick streets and highways. Any reader who is sufficiently interested can obtain a copy of the bulletin by addressing the National Paving Brick Mfrs. Assn., Engineers Building, Cleveland, Ohio.

WILL MANUFACTURE VITRIFIED PAVING BLOCK.

The Russell Clay Mfg. Co., incorporated under the laws of Delaware, expected to begin operation in April, of the

main thoroughfare between Philadelphia and New York, which has been published by the Philadelphia Bureau of Highways, shows conclusively that the low maintenance cost of the brick paved roadway is a forceful argument in its favor. In competition with cement, concrete, bituminous concrete and bituminous macadam it shows up in durability and resistance to wear in a way that ought to settle the argument and make the road building public understand that the brick paved highway is not only the best highway but is the cheapest in the long run.

PAVING BLOCK THAT FLOAT.

THE RECENT EXCESSIVE rains and consequent floods have caused the unusual disaster to the wooden block pavements in many cities. Wood paving block are like Ivory soap in one respect—they float—and when a street paved with wooden block is flooded with water, the block



Wood Block Pavement Destroyed by Recent Flood.

plant it has acquired at Alton, Ala., for the production of vitrified paving block. The daily capacity will be 50,000. Machinery has already been installed and is in readiness for operation. The board of directors of the company is as follows: L. S. Russell, H. N. K. Jefferson, vice-president of American Trust & Savings Bank; M. M. Baldwin of Tillman, Bradley & Baldwin; Floyd B. Powell of F. B. Powell Company, Inc.

BRICK ROADS STAND THE TEST.

There should be good cheer to the paving brick industry in a recent number of Dependable Highways which contains a report on the Philadelphia test roadway. The official report on the Byberry and Bensalen test road, the beginning of the

swells and floats away. The accompanying picture shows what happened at Meridian and Sixteenth streets, Indianapolis, Friday, April 14. It's an old story, oft retold wherever wood blocks are used for street paving, and floods occur.

The Burton-Townsend Brick Plants at Zanesville, Ohio, and Ashtabula, Ohio, resumed industrial activities the first of the month. According to J. R. Lucktenberg, manager of the company, between eighty and one hundred men will be employed at the Ashtabula and approximately 200 on the two plants at Zanesville. The latter factories have been closed down completely since early last fall; in fact, the No. 2 plant was operated very little last year. From inquiries and orders on hand the indications point to the operation of all three plants on building and paving brick for the greater part of the year.

Written for THE CLAY-WORKER.

CINCINNATI BUILDING NEWS.

THE LARGE AMOUNT of residence building now in actual operation or in which contracts have been let in Cincinnati has more than encouraged brick manufacturers and dealers on the outlook for this year. In fact, they are elated. In January, they were practically assured of quite a number of large downtown projects, such as the Business Men's Club, Elks' Temple, Provident Bank addition, Southern Railway office and of a number of large church buildings. But opinion on the prospects of the year was backward owing to the uncertainty of the amount of residence building that would take place.

All doubt that residence building would lag this year has been removed. Enough residence building is assured to make this summer one of the busiest in the brick and building industry since 1912. The housing shortage is now estimated at between 4,000 and 5,000 but Bleecker Marquette, executive secretary of the Cincinnati Better Housing League, believes that with the amount of residence building in sight, the peak of the shortage has been reached and will rapidly diminish during the year.

Brick men are practically unanimous in their expressions on the business outlook and can see only good times in their industry for the balance of the year. The coal strike, it is believed here, will be settled before any serious harm is done to the building industry and no trouble is anticipated by the contractors in reaching an agreement with the union bricklayers when the present contract with the union expires on May 1.

Plans for the new Home of the Friendless on Bethesda avenue call for an institution costing \$250,000. With the erection of this building, all children's medical institutions in Cincinnati will be centralized around the College of Medicine.

Jacob Warm of the Ohio Building and Construction Company is having plans prepared for a ten-story manufacturing building with an arcade arrangement which will involve the expenditure of approximately \$1,250,000. The building will be located on East Court street, within half a block of the Courthouse, and it is believed that when completed the building will be one of the most distinctive in the Middle West.

John G. Welling, 40 years old, of the contracting firm of Welling & Franz, died at his home, 2153 Harrison avenue, Westwood, last week. He had been ill several months. Welling built the Westwood sewer system and also part of the sewer system of Madisonville. He also took part in the construction of the Millcreek interceptor. He was a member of several fraternal organizations and also of the Cuvier Press and Blaine clubs.

The Cinnor Pottery Company has obtained a ten-year lease on the property, 2117-23 Reading road. The company has just recently been organized.

Enough sand has been found on the site of the old Johnson building to furnish a sufficient supply for use in mixing concrete and mortar for brick.

J. & F. Harig, Cincinnati, have been awarded the contract for the structural branches of the new building of the Business Men's Club. The cost of the work awarded to the Harigs amounts to \$907,900. The total cost of the improvement will be \$1,728,982. The building is to take in the main clubhouse features of the organization, including hotel department, and will be eleven stories high. The building can, if the necessity ever arises, be converted into a first-class hotel at comparatively small cost. There were a large number of outside bidders on the job. It is expected that work will be fully under way by May.

The New York Terra Cotta Company has been awarded

the contract for the terra cotta to be used in the new dormitory of the University of Cincinnati. The total cost of this improvement will be \$250,000.

Over a hundred houses of the highest class will be in process of construction on the Avon Hill subdivision before fall, according to the Frederick Schmidt Company, which has purchased 152 lots in that locality for the construction of as many houses.

More than \$100,000 will be spent by James B. Blanchards, builder, in the construction of nine houses on Rosehill avenue, this year. "CINCY."

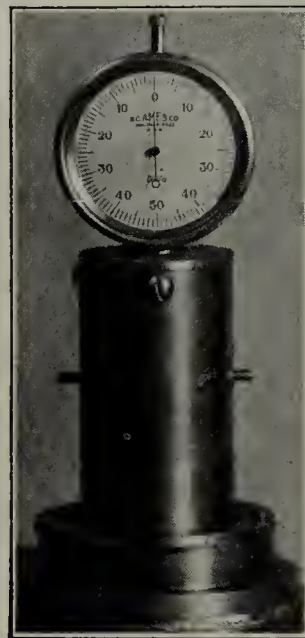
DENSITY GAUGE.

It is recognized by all clay workers that the tempering of clay is the big vital point of importance in the production of clay products.

Some clays require more density than others and it is necessary to ascertain the best working density and then by maintaining the temper of the clay at the determined point the production of highest grade ware is possible without variation.

How would you like to know how stiff your clay is tempered?

Would you like to be able to give definite instructions as to the temper at which your clay is to be worked? Would



Clay Testing Instrument.

you like to make simple tests to learn at what density you ought to temper your clay and ascertain what is required in order to make the best ware and afterward maintain this temper uniformly?

Here is an instrument designed for this purpose. It consists of a steel spindle $\frac{1}{2}$ in. diameter pointed at an angle of 60 degrees, weighted to 12 ounces and the necessary gears for operating a balanced pointer over a scale graduated 0 to 100.

By simply placing the instrument on the issuing column of clay the degree of hardness is instantly indicated. This instrument was made for our own use in our clay testing room.

In case sufficient interest is manifested, arrangements will be made for its manufacture.—American Clay.

BUILDING INDUSTRY AGREEMENT.

It looks like maybe the crop of spring strikes in the building industry may be cut short this year by an agreement between Associated General Contractors, the architects and engineers organizations and building trade employers on the one

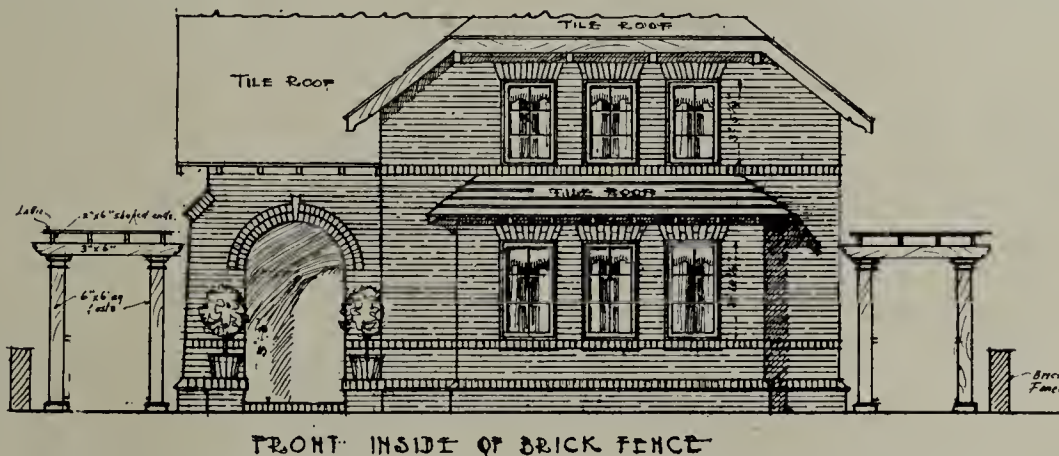
hand and the building trades department of the American Federation of Labor on the other hand through the use of the National Board of Jurisdictional Awards in the building industry. An agreement has been reached that provides that local building trade councils may suspend unions which fail to abide by the decisions of the national board. In brief, the idea is to have a sort of court of arbitration to which disputes will be submitted with the object in view of settling them and preventing strikes.

THE HOME COMPLETE.

A Great Building Exposition to be Held in the Indianapolis Coliseum May 8 to 13, 1922.

INDIANAPOLIS is to have its own Home Complete Show the week of May 8, where everything entering into the building and furnishing of a home will be on exhibition.

One of the many interesting features of the exposition will be a model brick bungalow, the front of which will be erected of brick supplied by the American Face Brick Association, and erected with the co-operation of the Local Bricklayers' Union, the Local Hod Carriers' Union and the Brick Contractors' Association. These four organizations are co-operating in the enterprise in order to let the lovers of good homes see how attractive a brick home can be made.



Front of the Brick Bungalow at Indianapolis Home Complete Show.

Tuesday, May 9, will be "BRICK DAY," when there will be special features, such as moving picture shows in the lecture room of the exposition building. Prof. G. C. Mars, lecturer on Architectural Art at Harvard university, will be the speaker of the day. There will be a meeting of the Indiana-Illinois Division of the Face Brick Association. Those desiring program of events and other particulars are requested to address Mr. E. C. Hervey, 802 Board of Trade building, Indianapolis, Ind.

A. D. COCHRAN JOINS THE BONNOT COMPANY.

AFTER A TERM of years devoted to the interests of the Harbison-Walker Refractories Company, and more recently with the McFeeley Brick Company at Latrobe, Pa., as plant superintendent, Mr. A. D. Cochran has joined the forces of the Bonnot Company, manufacturers of clayworking machinery at Canton, Ohio, where his life-long experience in clayworking will enable him to help solve the problems that arise in the equipment and operation of brick and tile plants.

BRICK COLORS.

Just now there is a new attraction for those contemplating building. The appeal of brick colors is to the eye and mind what that of paint was a quarter of a century or more ago. And as each one has a taste all his own as to what color or

combination of colors is the most sensible and attractive, and the most enhancing to the value of the building itself, the study and selection of these colors is becoming one of the leading problems that presents itself to the builders of today. So these color problems, with their various solutions, are to fill the land with beautiful homes—of the kind that will endure, unchanged, for years and even centuries, surpassing in every respect the old frame buildings with their fading colors of paint.

T. T.

BIG BUILDING AND BRICK.

WHILE BIG BUILDING projects add wonderfully to the total of building operations, they do not add in proportion to the value of demand for brick. This is because the big buildings of today do not use the quantity of brick for the same work that was used a generation ago. No matter whether it is hotel, office building, or factory structure, in the main the plans of today involve making structural members of steel and merely the using of brick for making the face and filling in the outer walls. Compare the walls of a modern building of this kind with some old time building that was constructed purely of masonry and you can readily see how the percentage of brick construction in this class of buildings has been reduced.

It is even worse in industrial buildings because in seeking plenty of light these have been reduced almost to steel frame

structures with steel sash and glass making up the main part of the wall space. Indeed there are many factory buildings today made of standardized steel frames in which practically no brick enters, not even for the foundation work, because concrete is used for that.

Meantime the interior cross walls of office buildings, hotels and other big structures are now made up of hollow building tile instead of brick. So taking it all together the big buildings furnish but little call for brick compared to the amount of money and work involved in their construction.

It is the homes and the more modest buildings and out-buildings on farms, and garages on the city home lot and structures of this kind which make the real field for brick these days. That is why attention has been centered largely upon home building by the brick industry. It is a good reason, too, to keep the attention centered on the home and the home surroundings, because it is here that we will find the big field for brick marketing from now on.

OBITUARY.

Death of H. R. Mears, Bloomsburg, Pa.

The final summons came to Mr. H. R. Mears of the Bloomsburg Brick Company on Easter morning in a very unexpected manner. He was taken ill Saturday and died Sunday, the 16th of April. He has had charge of the Bloomsburg Brick Company as local manager and was well known and highly respected in that section. He is survived by his widow, one son and a daughter.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

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THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77. April, 1922. No. 5.

CURRENT COMMENT.

Clay Products are coming along.

* * *

Wages are still a fretful point and count rather high in the cost of building.

* * *

Quite a lot of the success of the clayworking plant hinges upon good foremanship or supervision.

* * *

You can't put old heads on young shoulders, but is that any reason why youth should refuse some guidance from age?

* * *

If the coal strike curtails burning of clay wares for any length of time a lot of people will be wishing they had piled up more surplus stock earlier.

* * *

Part of the success in pushing either brick or hollow building tile in any given community depends upon the local dealer hook up and the active interest shown.

* * *

Mechanical speeding up of the cooling down of a kiln of ware by blowing hot air out and cold air in, makes it practical to hurry things along when the demand is urgent.

* * *

In the old days we had some rail splitters in politics and in office, but these days we are handicapped by hair splitters who make difficult the progress, especially in international affairs.

* * *

The main secret of dry basements is to have a drain tile outlet along the lower base of the walls. And the fact that there are too many homes built without this suggests that

maybe the drain tile people are neglecting some good opportunities here.

* * *

You don't hear a man who has built with brick saying he wishes he had built with lumber.

* * *

The main question about a new machine or device is not what will it cost, but what will it do?

* * *

There is seldom a change from winter to summer but brings a crop of spring strikes which always do more harm than good.

* * *

We have only begun to touch the possibilities of the use of brick in landscape work and it is about time to be taking more interest in this.

* * *

Tile drainage and intensive farming should go hand in hand, and now is a good time to preach the doctrine of bigger crops on less acreage for better profits.

* * *

When it can be demonstrated that ball and roller bearings will lighten the friction load of wheel barrows, trucks and cars, it is time to give them a chance to prove their worth.

* * *

We weren't prepared for peace any more than we were for war, but in each case we have been able to make a good showing by setting our minds to the problems of the day and getting busy.

* * *

Diversity in clay products is a good idea, if handled right, and one of the interesting questions of the day is to what extent each brick or tile manufacturer may diversify his products and profit thereby.

* * *

Even a brick building can be ruined by fire as some of the lumber advocates will point out, but that does not alter the fact that brick itself will not burn, but will help retard and check destruction of combustible property by fire.

WAGES AND PRICES.

There is dawning in the whole business and industrial world now a realization that prices and wages are closely linked together. That ordinarily to bring prices down wages must come down also, and keeping one up means keeping the other up. The one exception, the one way out is where and when we can substitute machine work for hand labor on any large scale. Where we can do this, where we can make machines and labor saving devices help, then and then only is there a chance to maintain high wages and at the same time lower prices. We have followed this consistently in the manufacture of brick and other clay products, and now if we can introduce and keep developing more labor saving devices into the work of handling and erecting structures for these products, then we will be able to keep up a high wage schedule and at the same time reduce building cost.

ABOUT PRICES.

About the simplest and best advice that can be given the trade about prices is to use caution in trimming them down so as to not get them below the profit point. The reason for this is that on the whole the public resents any effort to advance prices, and it is so much easier to reduce prices than to advance them again that the reducing should be done carefully and only after a full survey of cost has been made. Not only has the public been making a strong drive for de-

lated prices, but competition in business in some sections and some lines has led to reckless and unwise concessions in prices in the hope of landing more trade. It is right and proper that the whole clayworking industry should readjust prices downward whenever and wherever conditions will permit. Also they should seek for ways and means to reduce cost and to economize in production and distribution so as to get the lowest price practical to the consumer consistent with fair returns in business. It is not a time, however, for reckless and ill-advised price trimming. Study your costs carefully before making price readjustments and make sure that your business can stand it and will yield a profit on lower prices before you put them out, because once lower prices are made it is very difficult to increase them again.

THE TREND IN ADVERTISING.

The trend among those who set the pace in advertising these days is toward putting more about people and less about things into advertising copy. Interpreting this into terms of advertising brick, hollow building tile and other clay products, it means bringing in the human element and telling about what the use of these items means to certain people as well as saying a word about the quality of the articles themselves. There is a tip in this to those who are preparing advertising copy. Get something about persons as well as about things in the copy and it will add more interest and be better in keeping with the trend of the day among advertising experts.

FOOL-PROOF THINGS.

Machinery people and managers have long been seeking to develop fool-proof qualities in machines, devices and methods to reduce to a minimum accidents due to lack of knowledge or carelessness. Fate has recently given a little touch of irony to these efforts, according to a story of a fool-proof locomotive which had been designed and constructed, and was then ruined in the process of firing up because someone had let the water out and those firing up did not think to fill it again, and so the crown sheet was burned out and the boiler was ruined. Incidents like this make us think that there ain't no such animal as a fool-proof machine. On the other hand it is a demonstration pointing that we need to continue our efforts toward making machines as nearly fool proof as possible.

PAPER PROFITS AND LOSSES.

One of the interesting sets of figures published on business losses during 1921 covers the packing group. It is said that the aggregate deficit of a group of big packers of the country was close to eighty million dollars and one concern alone reports a deficit for the year of \$8,462,650, in comparison with a profit of a million and a half in 1920 and five millions in 1919. The returns indicate that on the whole the total volume of business done by the packers during the past year was fairly comparable with the previous year, but the value represented in dollars and cents was considerably less.

One thing they didn't tell us is what this loss was composed of. If it was merely a writing down of inventories and property values, a process of deflation which the whole country has been going through, it doesn't mean much more than the statement that they have taken their deflation losses and are now back to solid ground again. In this they have done no more than people all over the country have done.

Paper profits and losses play queer pranks now and then and unless analyzed carefully are rather misleading. The figures quoted above may indicate that the packing industry

is on the verge of bankruptcy, while as a matter of fact they are as sound and prosperous today as they have been in any time in their history. There were a lot of paper profits during the war period which have naturally had to be followed by a lot of paper losses to strike a balance and get back to earth again.

A BRICK 200 YEARS OLD.

Every now and then we get a reminder of the durability of brick in reports of old brick finds here and there. A recent one tells of the removing of a brick from a chimney in Bloomfield, Mo., which bore the date of 1720, indicating that it had been made more than 200 years ago. The report says the brick is hand made and is without the smooth finish and uniform thickness of the present day brick, which is incidentally a reminder that the brick of today are both better and more durable than even those brick of olden times which have made such a record.

GOOD WILL ASSETS.

People are beginning to estimate good will in dollars and cents now and to include it as a specific item in the assets of business. There are really two kinds of good will which contribute to the asset value of business, though it is not easy to measure definitely either one of them. The first, and one most naturally thought of by the business man, is the good will and friendship of the buying public, of his customers and people who may be his customers in the future. That is good but it is not enough. The friendship of your competitors in business also constitutes an asset. It may take you some time to figure this out and understand it clearly, but if you will practice it a while the full realization of it will come to you eventually. The way to figure it out is to think how you would like to have your competitor treat you, then begin applying that treatment to him and keep it up until you have developed a friendly relationship something like that between members of a given family. When you reach that kind of friendly basis with your competitor and others in the same line of business you will have built up an asset of good will that is of distinct value in your business.

BUSINESS AND THE BACKBONE.

There is a little argument going on now as to who or what is the backbone of business in the United States, the farmer, the builder, or the manufacturer.

In a discourse on this subject in a recent commercial edition of the Chicago Herald-Examiner, Geo. W. Hinman says that the vice-president of a large brick company came to his office to contest the claim of the farmer and said that shelter was as necessary as food. Then there followed some comparison of the capital represented and the people dependent upon agriculture and building industries, manufacturing and so on. Setting forth claims that their particular division of the industry constitutes the backbone of business. It seems from this showing that the building industries and the agricultural industries are pretty well balanced on matters of finance, employment and people dependent thereon, while the manufacturing industry make an even larger claim as to capital, employment dependence and so on.

Perhaps the best answer to it all was made at a convention of lumber people the other day when an association man made the point that throughout all age business has been the backbone of nations. What he meant to set forth was that the business man and the business instinct is the dominant factor in the progress and welfare of nations, and this busi-

ness idea applies to agriculture as well as to manufacture and trade and building industries.

Now do you get the big idea? The big idea is that business is the backbone of the nation and that all the different divisions of the industry are factors and interdependent upon each other. It is the business element and business management, however, that counts, and what we need is more of that business element and broader and better ideas on the part of business men as to how they should conduct their affairs. Briefly, business is bettered by association work by men conferring together and exchanging information and ideas which are both enlightening and stimulating.

Therefore business is the backbone of the nation, and the better condition we can keep business in the stronger will be the nation's backbone.

\$300,000 SECTION OF LINCOLN ROUTE NOW BREAKING UP.

THE \$300,000 CONCRETE road on Lincoln Highway from Schererville to the Porter county line, which was built by the Federal Construction Company last year, is already in bad shape, it is reported. There are cracks twenty-five and fifty feet in length. More damage will probably be done when the heavy rains this spring wash under the pavement.

The road was a state highway job and the inspectors were employed by the state and not the county.

The road was only completed in November and has had comparatively little traffic.—Gary (Ind.) Post-Tribune,

INDIANAPOLIS TERRA COTTA COMPANY ESTABLISHES A CITY OFFICE.

THE STEADY AND CONSTANT increase in the volume of their business has made it necessary for the Indianapolis Terra Cotta Company to establish a city office, and George H. Lacey, the general manager, is now domiciled in Room 1241 Lemcke Annex building, where the latch string hangs out to any and all who are interested in terra cotta. Heretofore the main office has been at the factory in Brightwood, which was rather unhandy for visitors who desired to call on either business or social affairs. Mr. Lacey reports that the factory is running full time and there is every prospect of their having a very busy season.

HOMER F. STALEY MOVES TO NEW YORK CITY.

The Metal and Thermit Corporation announces that Prof. Homer F. Staley has accepted an appointment as ceramic engineer in its laboratory and will assist them in the manufacture of high-grade tin oxides, which are being used extensively in the production of enamels for sheet steel and cast iron and in the making of glazes for sanitary pottery and terra cotta. Professor Staley is well known in the ceramic world, having served as president of the Ceramic Society and as editor of the Transactions of the Society, and more recently has been associated with the Metalurgical and Ceramic Department of the Bureau of Standards of Washington, D. C. A host of friends will wish him the best luck in the world in his new enterprise.

FOR SALE.

One American Truck Body, One Thousand Brick Capacity. Price \$200.00.

O. ZIMBAL BRICK CO.,
Sheboygan, Wis.

42 cm

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WANTED.

A-1 superintendent capable of handling paving block plant. Must be thoroughly familiar with all stages of production. Give references, experience and salary expected. Address

L. F. C.,
41 d Care Clay-Worker

BUSINESS OPPORTUNITY. FELDSPAR.

I wish to dispose of my entire FELDSPAR interests in four companies, three going, shipping crude and ground spar, one in development. Also one mine under lease, from which spar is being ground and shipped daily.

For one wishing to remove to this wonderful "Land of the Sky," this offers an unparalleled opportunity to come into an immediately paying business.

Ill health prevents my giving it the required attention. Business references exchanged. For full information, address

DR. O. L. SUGGETT,

128 Woodrow Ave.,

Asheville, N. C.

41 dm



Paved Roads

BY THEIR DEEDS YE SHALL KNOW THEM.

Paving brick—by the superior service they give—justify the extra cost of construction of a brick road.

Likewise, the American No. 290 Auger machine—because of the superior service it gives—justifies the extra quality we put into it.

The American No. 290 is particularly adapted for making superior paving brick, but it is doing record-breaking work on other Clay Products. "Its Deeds Make it Famous," as its users will testify.

WHERE IS IT USED?

Successful plants use it as a pace maker. It speeds production and cheapens cost.

But to be specific, it is used by—

Sheffield Brick & Tile Co.

Mack Mfg. Co.

Dominion Sewer Pipe & Clay Co.

Sheffield, Iowa.

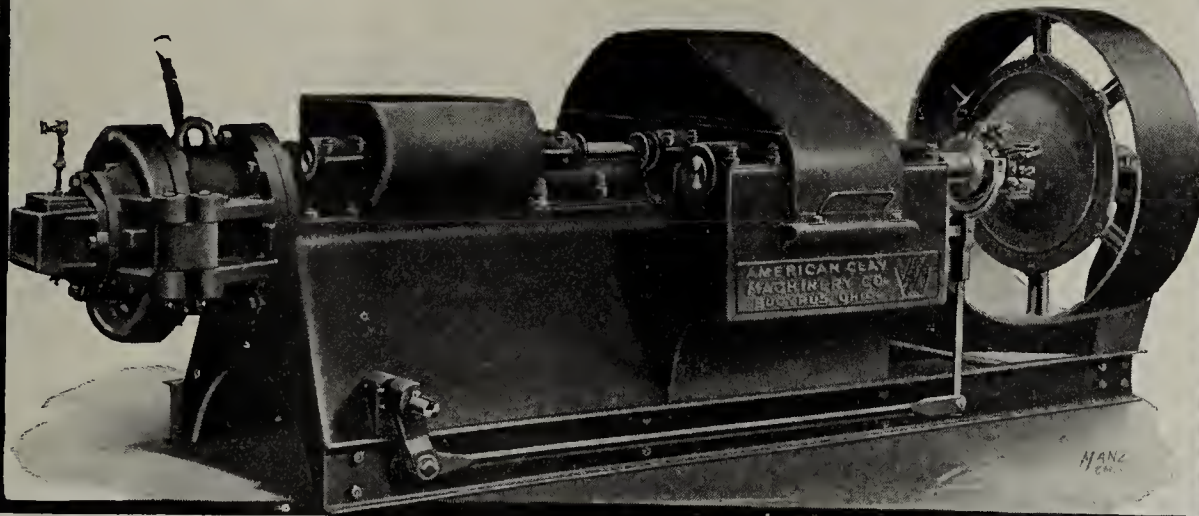
New Cumberland, W. Va.

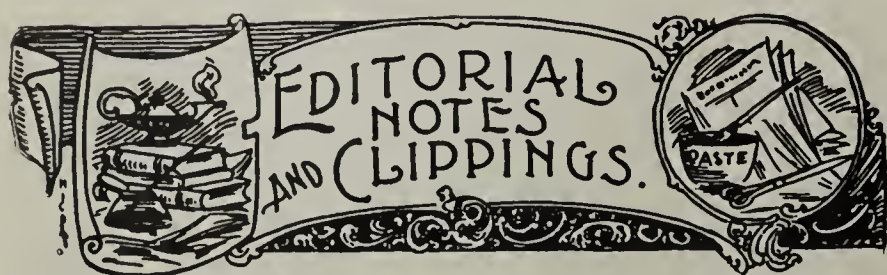
Swansea, Ontario

And by Many Others whose names you can have on application.

THE HADFIELD-PENFIELD STEEL CO.

Bucyrus, Ohio. Formerly The American Clay Machinery Co.





Dozens of carloads of brick are being shipped from the brickyards at North Haven, Conn.

The Mamer Brick Co., Benton Harbor, Mich., has increased its capital stock from \$60,000 to \$160,000.

The United Brick Company's plant at Conneaut, Ohio, resumed operation recently with a force of forty men.

The plant of the American Refractories Co. at Tilton, Ill., is being remodeled for the manufacture of Diaspose fire brick.

The Buckeye and the Champion plants of the McLain Fire Brick Co. of Wellsville, Ohio, are operating practically at normal.

Operation of the new brick plant owned by J. H. Thress, Tuscaloosa, Ala., began the first of the month. The plant cost \$16,000.

Fire in the sheds of the clay loading portion of the plant of the Richards Brick Company, Edwardsville, Ill., caused a loss of \$1,200.

The Iowa Clay Products Co. of Washington, Iowa, amended its articles of incorporation by increasing its stock from \$100,000 to \$200,000.

The Banfield Clay Co. of Irondale, Ohio, has resumed operations on their plant, where hollow tile and other building material are made.

The Snider Brick Plant at Ottawa, Ohio, has resumed operation. Inquiries indicate that the brick business is much improved in that section.

The Palmer Press Brick Works of Palmer, Ellis County, Texas, capital stock \$21,000, has been incorporated by Y. Barron, J. R. Beck and L. B. Griffith.

The offices of the Eastern Clay Products Association have been moved from 514 Pittsburgh Life Building, Pittsburgh, Pa., to 910 Penn Square Building, Philadelphia, Pa.

The Rylson Brick and Clay Products Co., Fresno, Calif., has been incorporated with capital stock of \$500,000. Brick and tile and other clay products are to be manufactured.

Contracts for 150 carloads of brick and building material to be shipped to all parts of the Northwest have been booked by the Washington Brick, Lime & Sewer Pipe Co., Spokane, Washington.

Mr. Alvin E. Wahle, together with Ralph Hartwell, has taken active possession of the DeWitt Brick and Tile Works, DeWitt, Iowa, and will continue the manufacture and sale of brick and tile.

The Tucson Pressed Brick Company of Tucson, Ariz., has found the demand for their product has increased to such an extent that it is necessary to rebuild the plant to enlarge the capacity.

Shepfer and Moomaw Bros. of New Philadelphia, Ohio, have finished their third new kiln and have started their fourth one on their new plant. The work on the new factory is progressing nicely.

The Canton Brick and Fireproofing Co., with general office in New Philadelphia, Ohio, announced recently the opening of a Columbus branch office, 39 West Long street, with J. O. Forse in charge.

Mr. Joseph Gittings has bought the interest of both J. R. Cunningham and Mr. Samuel Watkins of the Apex Brick Co., Apex, N. C., and has assumed active management of the company as treasurer.

The Grand Junction Clay Products Company of Grand Junction, Colo., is to erect a brick and tile plant on the Fairmount ranch northeast of Grand Junction. The plant

is to be operated electrically. It will be a six-mould plant with 20,000 to 30,000 dry pressed brick daily capacity.

The Henry R. Fall Co. of Trenton, N. J., manufacturers of roofing tile, will build an addition to their present plant to double the capacity. New mixing, pressing and other machinery will be installed.

The Wichita Brick and Tile Co., Wichita, Kas., has been incorporated with a capital stock of \$100,000. A plant for the manufacture of all classes of brick, hollow tile, sewer pipe and drain tile will be erected near the city limits.

The Star Porcelain Company, located at Newton, N. J., recently awarded a contract for the erection of a new building, an addition to their plant, the estimated cost of which is \$10,000. The new building will be used as a slip house.

Mr. F. W. Bryson has accepted the position as superintendent of the Western Virginia Brick Co., Charleston, W. Va. This plant has an extra good clay for fire brick, also buff and gray burning brick. The products are burned with natural gas.

The J. H. Balmer Company of Passaic, N. J., manufacturers of sanitary ware, has recently leased a portion of the building located at 67 Hamilton street, Newark, N. J., for a term of years and will manufacture their line of goods at this address at an early date.

American Shale Brick Company, Martinsburg, W. Va., has been capitalized at \$100,000. The incorporators are F. Vernon Aler, Henry J. Little, Martinsburg; Charles L. Magee, Washington, D. C., and James N. Dyson and James H. Dawes, Philadelphia, Pa.

The estate of James R. Sayre, Jr., Inc., Newark, N. J., has been incorporated under the state laws with a capital of \$128,000 to manufacture brick and other burned-clay products. The company is represented by E. M. and Runyon Colie, 763 Broad street, Newark, N. J.

The Triangle Clay Co., Uhrichsville, Ohio, was incorporated recently by Messrs. J. W. Askins, A. V. Sturgeon, J. W. Moore, F. B. and W. G. Maurer. This company takes over the property of the Union Coal and Fire Clay Co, East Dennison, and will manufacture sewer pipe and flue lining.

The Wabash Paver Company of Veedersburg, Ind., which has been closed down for four months, resumed operation recently. Since the abandonment of the C. & E. I. railroad the company has made arrangements with the T., St. L. & W. for switching shale from the pit to the plant.

N. B. Markham of Columbia, S. C., has taken up the active management of the Seaboard Shale Brick Co., Charlotte, N. C. The plant is located near the Seaboard Air Line about twelve miles east of Charlotte. The company was organized about a year ago to engage in the manufacture of brick.

The Queens Run Fire Brick Company, Lock Haven, Pa., has taken over the North Branch Fire Brick Company and the West Branch Fire Brick Company, both operating plants in the section, and will consolidate the companies under its present name. A number of improvements will be made. William Sleicher is president, and George H. Diack, general manager.

The New Hampshire Brick Manufacturers Association has appointed a committee to consider plans for the improving of transportation methods in their territory. The committee is composed of W. S. Goodrich, Epping; Robert A. Parry, Rochester; A. J. Densmore, Lebanon; D. S. Stone, Woodville; Alfred J. Eno, Exeter; G. L. Lanoix, Rochester, and W. A. Spiers, Boston.

The Hawkeye Clay Works of Fort Dodge, Ia., has resumed operation after being idle since the middle of last summer. Mr. H. I. Moore, the manager, says that "there are indications of better business in the building trade, there are a lot of prospects for the building of homes, garages and business blocks in Fort Dodge, while the outlook for drain tile is also very bright."

The Fords Porcelain Works, Perth Amboy, N. J., recently incorporated with a capital of \$1,000,000. This company has three plants, two at Perth Amboy and one at Fords, N. J. The company was organized some time ago but has just taken out its corporation papers and will continue to manufacture its same standard line of goods. Mr. Abel Hansen is president of the company.



Why use two machines—if one will do?

COMPANIES that separate materials into more than one size are effecting marked economies by using the two-surface HUM-MER Electric Screen in place of two single-surface screening machines.

The two-surface HUM-MER saves considerable in investment; saves 50% of head-room and floor space; saves the extra power required in operating two machines and re-elevating the material, and reduces the size of the building required.

The two surfaces are bolted rigidly to the electric vibrator—thus the two surfaces are vibrated simultaneously with the same power.

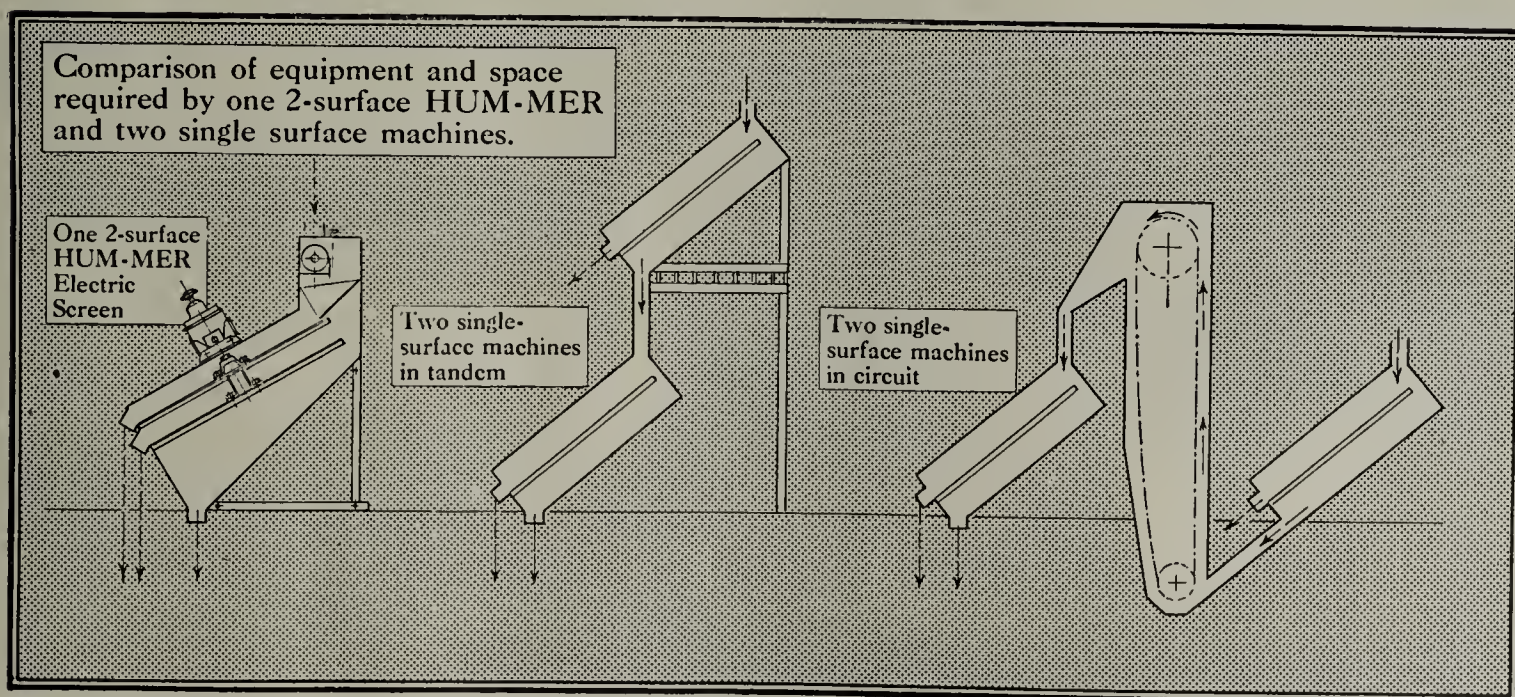
The two-surface HUM-MER produces a clean separation on *both* screening surfaces, and either one or two separations can be made without disturbing feed or discharge connections.

Investigate the economies of the two-surface HUM-MER.

Catalog 42-W sent upon request

THE W. S. TYLER COMPANY, Cleveland, Ohio

Manufacturers of Woven Wire Screens and Screening Equipment



Written for THE CLAY-WORKER.

NEW ENGLAND SITUATION.



AS EACH WEEK rounds out, the totals in actual contract awards in this district are exceeding by a good amount the totals as they appeared for the same period of 1921. Work is really moving forward. In many instances the totals are not up to 1920, but then, the costs were high and the abnormal conditions all helped to make small work look big. A contract for a medium operation under the guise of high prices appeared as a small object under a magnifying glass.

There seems to be quite a number of contracts that are just waiting. This may be due to a declining market, as there is a tendency at present to seek slightly lower levels. In the Boston market a slight falling off has been noted, while in Providence the prices remain quite firm. Others are the same in many cases, governed more or less by supply and demand. In the main, there can be no real sharp decline to be reported.

Throughout the entire section construction work is very much on the move. A great deal of activity is to be seen. It is true there are sections where there is very little or nothing going on, but there is a big improvement over what has been seen in some visits in the past.

In other sections there appears to be a reduction on some of the basic materials. Hartford shows up with Connecticut brick at \$14.50. This price is reported as being \$8 less than one year ago. Some yards seem to have a good supply to care for spring demands, while others are not so well off. This \$14.50 price is the figure quoted at the yard, with the cost delivered at \$16. Other centers are lining up approximately the same.

Boston is quoting commons at \$15.50 to \$18. Connecticut

brick is priced at around \$20 on the job, though this price may vary \$1 one way or the other, depending upon the freight rates, though usually stays close to the figure quoted. Hudson River naturals are bringing \$11, while the sand struck product goes out at about \$16. Water struck are marked at around \$30, with selects of the same material quoted at around \$32 to \$33. In Providence common brick are going out at \$20 to \$24 on the job. Some supply is to be seen, while other yards are reported as having a scant stock and will have to go elsewhere to satisfy the spring demand.

Face brick is seen without change regarding prices. The Boston market is quoting smooth and rough texture varieties at around \$50 at the job. Providence has the same varieties at \$50 to \$60. The shades being used are mostly the darks, with some selection of light buffs and gray.

The figures coming out in the totals reported for February for this section are showing up well for the district as a whole. They are far in excess of any previous total reported for the like period. In some cases they are over the line drawn as a possibility and are well in shape at present for comparison. All are of an open mind and dealers are of the opinion that there will be a good spurt shown at the time frost leaves the ground.

It has been reported that many contemplate building, but are slow in making their decisions due to the fluctuation of prices and the uncertainty of labor costs. When these will have been eliminated things will be ready to go ahead with much speed, and it is the consensus of opinion of all connected with the building industry that spring will mark a decided change in the prospects. Building is sure to go forward. There is considerable small work on the tables, which will be started as soon as the frost is from the ground.

Farmers in this section of the country are contemplating building and there are some planning to use burnt-clay products. There are garages, farm buildings and miscellaneous structures to be built. In sections remote from fire protection burnt clay offers pleasing possibilities as to fire hazards and exterior appearance.

NORTH EAST.

THE MANN PATENT TROWEL

A NEW TOOL

That will quicken and
cheapen brick construction



Home of the Inventor O. F. Mann, Erected in Less Than Three Weeks
By One Brick Mason and Helper Using the Mann Patent Trowel.

This is a new and improved tool for bricklayers, with which two to four times as many brick can be laid in a given time as with the old trowel.

With the Mann trowel a brick building can be erected in half the time and at proportionately lower cost than by the old method.

For full particulars and instructions as to the use of the new trowel, Address

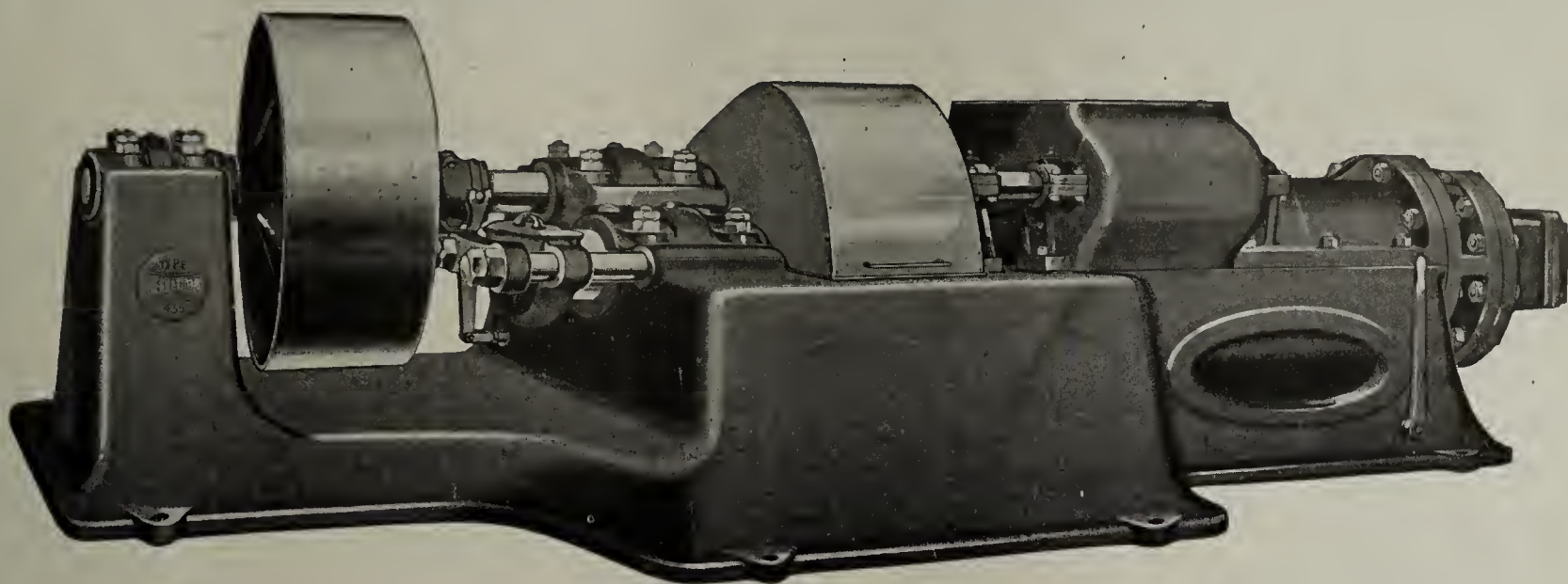
M. P. Trowel Agency,

213 Hudson Street

Indianapolis, Ind.

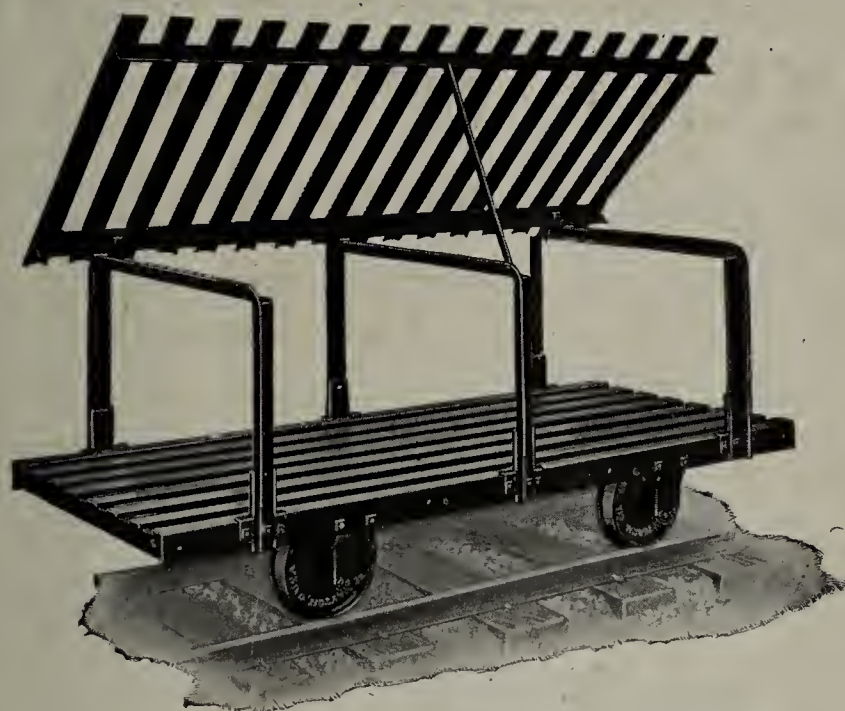
Price \$2.50 each.





Type 445—25M to 40M Brick per day
 Type 435—40M to 75M Brick per day
 Type 425—75M Brick per day upward
 Or the Equivalent in Hollow-ware.

**THREE MACHINES OF ADVANCED DESIGN
 TWO MAIN CASTINGS, SHAFTS AND GEARS**



Type G

**Dryer Cars
 and
 Industrial Cars
 of all types**

**A Complete Line of
 Machinery and Equipment
 for the Clay Plant**

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

Written for THE CLAY-WORKER.

WISCONSIN BRICK AND BUILDING NEWS.



WE HAVE BEEN assured by our coal dealers that we shall have sufficient coal to last the contemplated length of the miners' strike," declared Charles L. Burnham of Burnham Brick Company, Milwaukee. "Milwaukee is one of the favored cities in the West that has an adequate coal supply to carry the industries for several months. Of course," continued Mr. Burnham, "if the miners are out longer than we think they will be, a shortage will be felt, but for the present, as long as Milwaukee is a coal distributing center, we have little cause to fear any effects of the shut-down." Reviewing business conditions in the brick manufacturing industry, Mr. Burnham said: "We are taking in a fair amount of orders every day and the volume of business for Milwaukee in general seems to be quite satisfactory. The unfilled order situation in this city is in excellent shape, architects offices are working on a large number of proposed plans and the future is certainly encouraging for manufacturers of clay products."

A large number of small brick jobs have been let the past month in Milwaukee, brick residences are becoming very popular this spring, more homes of this type under construction this year than last. The Marquette University new Dental Building will call for 150,000 face brick, the new Soldiers' Hospital at Milwaukee, approximately 1,000,000 face brick; the Children's Hospital, Milwaukee, 500,000 face brick, and the Mendota (Wis.) City Hospital, approximately 150,000 face brick.

The Wisconsin Clay Products Co., with principal offices at Kenosha, that had recently filed articles of incorporation, capitalized at \$100,000, has purchased fifteen acres of land on the Burlington road near Kenosha and will construct a new factory. According to the plans of Michael Orth, Joseph Lauresson and Gottlieb Schaefer, directors of the company, the firm will manufacture bricks, tile and clay products, and expects to be ready for business in sixty days, as soon as machinery is set up. Orders for bricks have arrived at the new factory totalling one-half million. The spring building trade is beginning to boom and to handle the early trade the company plans to open with a force of twenty-five men.

Building is still booming in Wisconsin cities and towns, as indicated by the issuance of building permits to date. According to W. D. Harper, building inspector at Milwaukee, building permits issued to April 1, 1922, are 5,903 for \$5,778,984 worth of building, as compared with a total for the same period in 1921 of 5,158 permits for \$4,186,714 worth of build-

ing. Members of the Milwaukee Real Estate Board, speaking at a luncheon during their monthly meeting, expressed their belief that Milwaukee is on the verge of one of the greatest home-building booms in its history. Reports showed that the prices of building material were about stationary and somewhat below the level of two years ago. One real estate company sold 800 lots in a subdivision to prospective home builders. Another firm reported fifty homes under construction and plans being prepared for the erection of 125 or 150 more during the coming season.

Reports from Oshkosh, Wis., indicate a similar condition. William Radford, sales manager of Radford, Wright & Co., of that city, in an address before the Kiwanis Club, predicted: "The year 1922 will be marked by more building than 1921, but it will be exceeded by the year 1923 in activity of construction." Wages have been lowered 15 percent, according to the speaker, and there is an increase in efficiency as compared with war times, which makes the difference nearer 50 per cent in the output. Prices of building material have not decreased to any considerable extent and will remain stationary, in his opinion. "Building costs are at rock bottom," he said, "and they may be even a little higher in 1923."

A record building program is also the report emanating from Fond du Lac, Wis. Two \$500,000 structures are being planned, a hotel and apartment house. A \$350,000 addition to St. Agnes Hospital is also being planned. In addition to the above mentioned projects, a number of smaller buildings are in the process of construction and plans for still more are under way, promising a record building boom for this city. Contractors and real estate men declare that the building program will aggregate more than \$2,000,000 during the spring and summer.

According to predictions of Wausau, Wis., building contractors, 1922 will witness the greatest period of building construction in the history of that city. It is estimated that over one million dollars will be invested in building projects during the spring and summer months. Among the new structures that will in all probability be under way this year are: The Elks' Clubhouse, \$75,000; Plummer Hospital, \$100,000; First Ward School, \$75,000, and remodeling of Masonic Temple, \$50,000. New business houses are planning additions and an estimate of 400 new homes will be constructed.

Playing on the spirit of antagonism is the easiest way to arouse men to rash acts, and too often labor leaders take the easiest way and thus keep alive the spirit of antagonism between labor and capital, which ought never to have had a place in this country. And the pathetic thing about it is that the workers suffer while the agitators profit from this.

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher,

412 No. Walnut Street,
Bloomington, Ind.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

PANS PRESSES CRUSHERS

ETC.

SOONER OR LATER YOU WILL
EQUIP WITH
STEVENSON

WHY PROCRASTINATE?

Bulletins on Request

GENERAL OFFICES
AND
WORKS
Wellsville = = Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING
Chicago = = = Illinois

STEVENSON

Mention THE CLAY-WORKER.

RECENT PATENTS.

(Continued from page 447)

face after said pockets have been filled, means for forcing said plungers outward as they pass the abutment surface, thereby compressing the plastic material in the pockets, means for forcibly retracting the plungers, whereby the vacuum seal between the ends of the plungers and the faces of the brick is broken, and means for again forcing the said plungers outwardly to eject the said bricks from their pockets.

No. 1,409,632. Building Brick. James P. Williams, St. Louis, Mo., patentee.

A building-brick comprising side load-sustaining members, hollow throughout their length; a base-web connecting the members at their lower portions; top webs connecting the members between their upper and lower portions; a central mortar-joint breaking member spaced from the sustaining members; and a plurality of right angular channels formed in the upper portion of the brick between the central member and the sustaining members.

No. 1,408,310. Rotary Type Brick Press. Delph Singh, Sydney, New South Wales, Australia, patentee.

A rotary press of the type herein defined, characterized in that the stock is received by gravity into moulds located radially in a rotating drum, that primary and secondary dies are carried in an oscillating frame, and that said frame is caused to oscillate in stage movements by cam action and is automatically interlocked with the drum during its movements in one direction, that pressure is applied to the secondary dies from eccentric mechanism coacting directly on a sleeve frame and through linkage and free cranks to the primary dies.

No. 1,408,877. Method of Making Drain Tile. Captain P. Funk, Wooster, Ohio, patentee.

The herein described method of making drain tile, which consists in puncturing the tile body with a plurality of parallel rows of diagonal perforations, which are laterally parallel to each other, by means of a series of puncturing needles

mounted on a common shaft which is driven reciprocally in a diagonal direction outwardly, in such a manner as to thrust said needles periodically in a slanting direction through the body of the tile while in a plastic condition, and passing from the tile press.

No. 1,406,890. Process to Secure Alumina from Clay. Harald Pedersen, Trondjem, Norway, patentee.

Process of preparing alumina comprising in combination the steps of reacting upon a potassium bearing clay with sulphuric acid, lixiviating the product, adding potassium sulphate to the obtained solution to produce potassium alum, decomposing the potassium alum by heating, separating the resulting potassium sulphate from the alumina by lixiviation, recovering potassium sulphate from the solution and adding a portion of the potassium sulphate to the sulphate solution obtained from a further portion of potassium bearing clay.

No. 1,409,300. Building Brick Mold. Clarence E. King, Salt Lake City, Utah, patentee.

In a building block mold the combination of a bottom; guide strips fastened to the edges of said bottom; side pieces resting on said bottom and contiguous said guide strips, to form a channel; end pieces in said channel held in place by pins projecting from said bottom and side pieces; spaced apart core blocks longitudinally disposed in said channel; partition blocks between said cores, with filling blocks to form recesses in the block case in said mold.

No. 1,411,532. Grooved-End Hollow Building Tile. Halver R. Straight, Adel, Iowa, patentee.

A hollow tile block for wall building purposes, having at each end two upright side members and two horizontally arranged connecting members, all of said members being formed with grooves, whereby mortar placed between two adjacent blocks may be compressed by moving the blocks towards each other and the mortar forced into said grooves to thereby lock the mortar in position by said grooves, and whereby the mortar between the side members is held in place by being united to the mortar between the horizontal members.

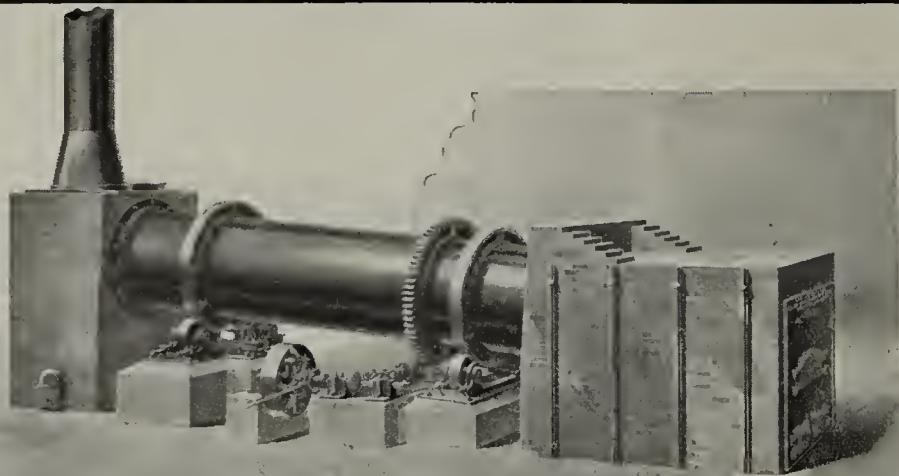


INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

Toronto Foundry & Machine Co.
Toronto, Ohio



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO

THE UNDERWOOD PRODUCER GAS BURNING SYSTEM

By using this system you can reduce your fuel cost and your labor cost. You can increase the amount of first grade ware. You can raise the selling value of all your ware. It will make more money for you than you have ever made per year before. If you doubt these statements go and see for yourself and be convinced. As a matter of education in burning clay ware visit the following plants:

U. S. Brick Co.

Tell City, Ind.

Huntingburg Pressed Brick Co.

Huntingburg, Ind.

Standard Brick Mfg. Co.

Evansville, Ind.

The Best Brick Co.

Evansville, Ind.

Kalamazoo Clay Co.

Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U. S. A.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.

HERE is activity in the building industry throughout the state generally. It is primarily along the lines of residential work. When comparisons are made with those for the corresponding period of a year ago, all parts and centers show an increase that is very surprising. In the northern part of the state, Newark, the total is averaging close to the half-million mark weekly. Other centers are showing just as good aggregates for weekly totals. In the southern part the amounts are correspondingly growing.

Many inquiries are being received by dealers, which would have a tendency to indicate a spring boom. Some report orders sold ahead, while others are not saying what they have up their sleeve. All feel that the backbone of hard times has been broken and we are now ready to move forward as soon as the seasonal adjustments can be made.

At present there is quite a lot of Jersey brick being sold in the principal northern centers, but it is mostly in truck load lots to the job. As the weather clears up the thoroughfares, transportation becomes easier and more deliveries can be made. The price generally asked for this material is around twenty dollars. There is a possibility of this price going up, and then there is a chance of it going down, the price being not as yet on a firm basis. This quotation is for first-class material. "Off-material" goes out at around \$16 and there are some who prefer this grade of brick. Raritan stocks are moving out at close to \$22, with orders coming along in fair numbers. Paterson is using a considerable amount of Hackensack material, which is coming in mostly by truck and is being used as fast as it can be received. Hackensack brick are being quoted at around \$20, but sometimes \$19 is the figure asked. North River brick is stocked well in Jersey City and other river points, but there is an end to this. The river not being open leaves the source somewhat farther away. Hackensack brick is also fairly well stocked, but there is not an over-abundance in view. Staten Island brick is being used and there are several cargoes absorbed weekly. No average can be obtained, as this brick is only returning after an absence of several weeks. South Jersey dealers report business good, with stocks moving out at around \$18, on the job, with the price at the kiln of \$16. All are of the opinion that the spring will show need for increased production and are making ready for the rush that is going to come with the opening of spring. Greater activity is seen along the line from manufacturer to consumer.

Hollow tile is receiving attention and many inquiries are coming in daily. Prices are generally the same, with a possibility of an increase. The present quotations are close to the pre-war basis. Opinion is expressed that the new level will be reached in the near future.

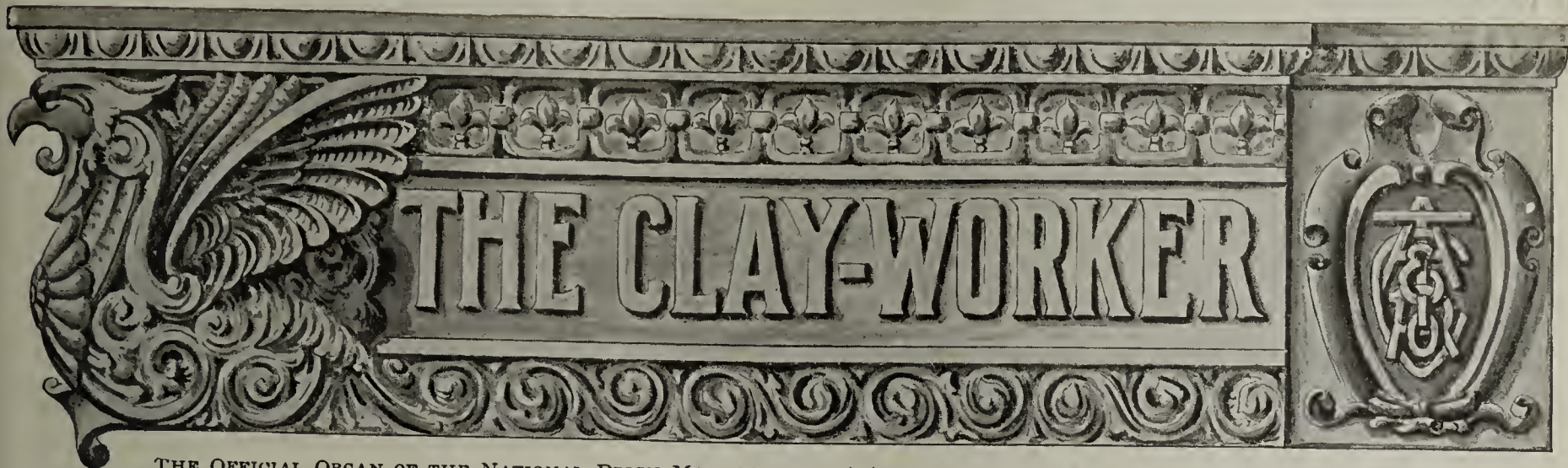
Face brick is in the limelight, with a fair amount of business being done and a large amount of inquiry moving toward the dealer. More business could be done were it possible to get to the respective jobs, but transportation is in poor shape for prompt delivery.

It is reported that the Thomas Maddock's Sons Company of Trenton, N. J., has reorganized its sales force. This company manufactures a high grade of sanitary ware.

The Paterson Brick Company has been organized at Little Falls, on the outskirts of Paterson, to manufacture and sell brick. Duncan H. Straubridge is the owner. They will manufacture common brick, beginning operations early in April.

BURTON.

One of the secrets of success is in getting the right men to do your work for you.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 77

INDIANAPOLIS, MAY 1922.

No. 6

ART IN ARCHITECTURE: EXAMPLES OF SPLENDID Structures in Which Well Burned Brick, The Best and Most Artistic Building Material, Plays a Leading Part for Durability in Construction. ♦ ♦ ♦

THE ACCOMPANYING views of some unusually beautiful structures give the reader an idea of the fine qualities of brick from the art side.

We are indebted to F. W. Fitzpatrick of Chicago, an architect of world-wide fame, for these pictures. Mr. Fitzpatrick is a lover of the beautiful and finds joy in depicting art in the use of building brick and terra cotta. He was one of the first to design the modern sky-scraper, a distinctively American institution. As a rule they are business buildings in which the display of artistic elements are very meager. It is quite different with churches, shrines, cathedrals and other ornamental structures, though occasionally there are exceptions such as the warehouse illustrated on another page.

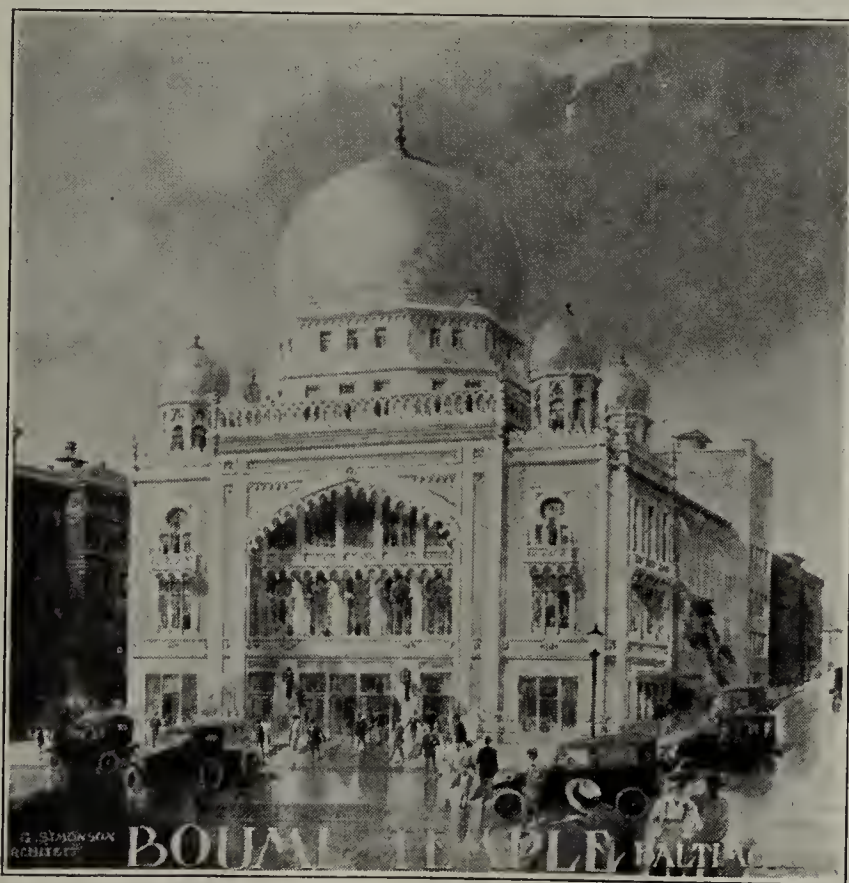
Because of its indestructible character and its adaptability to fine architectural effects the common building brick has held a distinctive place in the best build-

ings in the old world and will ultimately be equally conspicuous in the notable building of America where the tendency is toward better building and the use of

time-defying materials. These facts are indicated in the statistics of buildings now available. Some authoritative chartings of building operations with a view to determining class of buildings and the kinds of materials used indicate that today brick and hollow building tile represent the biggest material factor in building operations.

We have reached the point where close to 75 per cent of the buildings erected in point of value are constructed of fire resisting materials. These materials include brick and hollow building tile, steel skeleton structures, concrete structures, and stone buildings.

And brick and hollow tile represents more than all the others, but not quite half the total of all building material when lumber is included.



Masonic Shrine Temple, Baltimore, Built of Brick and Terra Cotta. Arthur C. Simonson, Baltimore, Architect. Drawing by F. W. Fitzpatrick.

The figures indicate that the percentage of wooden buildings is now down to about one-fourth, while brick and hollow tile is getting up close to half the total, with steel and concrete in the main making up the balance, there being only a small percentage of stone buildings.

It is noticeable in comparing the figures of today with previous periods that the percentage of lumber is steadily decreasing and the percentage of brick and hollow tile steadily increasing. It has not increased as much as it would, however, had it not been for steel and concrete. Steel skeleton framing and reinforced concrete have been and they are the real competitors of brick and hollow building tile even though both are found used together. A big office building that was once made of brick is now either steel structurally or reinforced concrete, and brick and hollow tile enter merely for facing, for partitions, fire proofing around structural members and so on.

The interesting and encouraging thing about it all, how-



Catholic Cathedral, All Terra Cotta. F. F. Faris, Architect, Wheeling, W. Va. Drawing by F. W. Fitzpatrick, Chicago.

ever, is that brick and hollow building tile are growing in prominence steadily and in a few years more should represent a full half of the materials used in building, that is, amount to as much as lumber, steel, concrete and stone all combined.

DRAIN TILE SPECIFICATIONS APPROVED.

THE AMERICAN ENGINEERING Standards Committee has approved as tentative American Standard the specifications for drain tile (C4-21) of the American Society For Testing Materials. The development of these specifications dates back to 1911 when the A. S. T. M. organized committee C-5 on drain tile to handle especially two problems. One dealing with the cracking of large drain tile, and the other with controversy between clay tile and concrete tile. The specifications are based on a series of investigations and a study of both methods of manufacture and uses.

FIRE PREVENTION.

Lessons of the Recent Chicago Conflagration.

By F. W. FITZPATRICK.

IN THE RECENT conflagration, Chicago had its costliest lesson since 1871. It will take it a while to seep in, perhaps several years, for we learn slowly, about fire, anyway, particularly if the molders of public opinion, the press, give such advice as I have already seen in our papers, editorial comments that at least give the inference to the ordinary lay reader that, after all, how buildings are built matters little, good and sufficient insurance is the proper caper! We only build now as well as we are absolutely compelled to by law, and if such pernicious doctrines go unchecked we will be clamoring for less law. Our national apathy toward good building, with all the safeguards we have been able to put about that art or science, already costs us in fire loss on buildings and goods, insurance premiums and the cost of maintaining fire departments something like 12 per cent more than is put into new building. Granted that Baltimore and San Francisco did carry fuller insurance after their great fires than before, but they built better, too.

Fire prevention by good building is not very well understood. No term in the English language has been more abused than "Fire-proof." Knaves distort it and the ordinary citizen invests it with mystery and enigmatic science, so that it has become a by-word, a travesty. I have seen ancient fire traps patched up with a bit of tin or painted with some patent fire-proof paint, advertised in signs with letters six feet high as "Absolutely Fire-proof Hotels." One puts stucco on his frame house and lo, it, too, becomes "fire-proof." Even the architects abuse the term or eight out of ten of them misunderstand it. They sin against its simplest, most elemental principles. They are infinitely more concerned about the turn of some gew-gaw ornament of their sacred "front" than they are about fire-resistance. If there is any paring or economy to be done to their design it is the fire-prevention features that are sliced to the very minimum the law allows.

And withal fire prevention is the most understandable, common sense, simplest thing there is about building. The layman should know its first principles at least, enough to be able to discern whether he is getting his money's worth in a building or not. In words of one syllable, so to speak, so that one who runs may read, here's fire prevention:

The whole thing is to avoid anything in construction that actually burns and to so protect all materials that are not combustible but that can be damaged by fire so that they are not exposed to fire.

Steel unprotected is as fatal to good construction as burnable wood. If your steel frame in all the structural parts of your building is properly and amply encased in brick, the right kind of tile or concrete, then it cannot be damaged by fire. So with reinforced concrete, if it is of good quality and there is enough concrete outside of the steel reinforcement to protect it from heat, then that kind of structure, too, is fire-proof. If the steel bars of the reinforcing are exposed or so near the surface that their protecting concrete can spall off in a fire, it is good night to that structure, as it is to unprotected steel framing or ordinary wood beams and columns. And in any conflagration that part of the structure as protected is safe. But it is no guaranty to the rest of the building or the contents against fire's damaging them save in that it, the frame, will not in itself carry fire from part to part as will wood framing.

Your outer walls if of good brick are subject to the least damage of all wall materials. Certain kinds of concrete, terra cotta, sandstone, granite and limestone follow. But everything in that building can burn, and all its wood doors, floors, finish,

and so on. Nevertheless, you have guaranteed a saving of the structural parts, say 46 per cent of the building's cost.

Now then, if you cut off each story from the other, by enclosing stairs and elevators in fire-resisting shafts and fire doors of metal and of wire glass you have reduced the fire possibility to the story in which it originates. So far so good, but fire can tackle any or all stories' contents from the outside unless you protect your windows and doors in exposed parts, metal sash and wire glass or fire-resisting shutters, something fire-resisting and that automatically closes in abnormal heat, then you have protected yourself from outside attack.

It is always a source of amazement to me that architects and engineers can do so much of all this so well and yet fall down on some one fool item or other that practically vitiates the whole thing. Building after building in Chicago will have their stairs protected but their elevators wide open, twenty stories of them. True, the stairs will enable people to get out without suffocation, but why not enclose the elevators, too, and have the job that much safer?

Go a step further and cut up your stories into several

and to property. How many of them are there in Chicago? Every second building you see in the Loop is dubbed "Fire-Proof"; now then, how many really are in the fullest sense of the term, absolute protection to life and property contained in them as well as to their own structures? I'd surprise you if I said you could count them on your fingers. You'd be more surprised if I said you could count those of the entire country on the fingers of one hand!

It's axiomatic that we will only build as well as we are compelled to. Few of us do it willingly. Poor as the showing was in this last great fire, had the buildings been of less resisting construction, built as most people would like to build, it would have burned much more rapidly, covered vastly wider territory and been appalling in its loss of life as well as property. Our every effort should be toward building up better, more stringent fire regulations. That is just as necessary as building up fire extinguishing equipment and fire department efficiency. What regulations we have are the result of thirty years of soul-racking work. For some time now we have been praying for two more efforts toward fire preven-



Pittsburgh Plate Glass Brick Warehouse at Detroit. F. W. Fitzpatrick, Consulting Architect.

smaller units by fire walls and fire doors and you further confine your possible fire to the contents of one of those spaces, a fire easily put out. And until all goods are shipped in metal boxes, all shelving is of steel, all carpets and hangings are of asbestos and all furniture of steel, you are bound to be exposed to fire originating somewhere about a building at some time, 90 per cent of cases due to negligence or ignorance, or worse. And we don't expect to go about in asbestos panties for a while yet, not even the most virulent of fire-prevention cranks, so we will be apt to have fire with us a long while to come.

Now, then, if with all these precautions you also install a sprinkler system that works, that is properly inspected and tested—often—then when fire starts in that one unit of space, to use an Hibernianism, it's put out before it begins. Indeed, I have seen a sprinkler fully protect a wooden building and its combustible contents right in the heart of a great conflagration, but I've also known of hundreds of the measly things to not function just as they were the most needed.

Is that kind of a building prohibitive in cost? No, in the long run it is the cheapest there is, the best protection to life

and to property. One is the change of our tax system so as not to penalize efforts at fire prevention. As things are now the better a man builds the more it costs him, and the greater his investment the higher will be his taxes. All wrong. It's the fellow with the fire-trap building who necessitates fire departments and all the great cost of city protection. Why not graduate the tax so that he pays a higher rate than does the man with a building requiring the minimum of costly protection?

Then I've clamored for years for a fire department expert inspection of all buildings housing numbers of people and having each and every one of them properly and conspicuously labelled, at its main entrance, as to its real nature: "Fire Resisting," when all the laws and good sense protection have been observed; "Ordinary," when not all of them have been done, and "Dangerous," when a building glaringly sins against those canons of good practice. How long do you think a hotel, for instance, would last with "Dangerous" over its door? What a scurrying there'd be to clean up and repair and change things so as to merit at least "Ordinary" over the door!

These two things are needed now, right here in Chicago, and we can have them if the press will hammer for them—not otherwise.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Two

By W. D. Richardson.

MR. PURDY WAS very properly given a place on the program of the first session for a general review of recent economic improvements in brick manufacture and especially for a statement of the progress of the researches undertaken by the Bureau of Mines, under the direction of Mr. R. T. Stull, superintendent of the Ceramic Experiment Station, aided by money contributed by the commercial associations of brick and hollow building tile manufacturers. As Mr. Purdy is a member of the Research Committee of the A. C. S., Heavy Clay Products Division, and has been active in promoting the research work of the society, he was able to give an account of the great work that is being done for the economic advancement of the brickmaking industry.

As I was on the program to lead in the discussion of Mr. Purdy's paper, I cannot pass it by in this review of the Indianapolis Convention. The paper covered such a wide field and the statements were necessarily so general that I can only express my appreciation of the effort and hope that the subject may be on the program of every convention. Would it not be well for our Committee on Technical Investigation to co-operate with Mr. Stull, turn over to him all the funds of the N. B. M. A. that may be available for research and secure from him a report for every convention of the accomplishments of the Bureau of Mines investigations? If Mr. Stull should not be free to present the report himself, then the chairman of our committee could make the report.

The need of such investigations is two-fold: First, to demonstrate how present old-style kilns can be operated more economically. Second, to get accurate and reliable information of the latest improved systems of manufacture, especially of the drying and burning and handling of brick, to ascertain just what the advantages and disadvantages are of each system and under what conditions each can be recommended, since every engineer knows that there is no system that is adapted to all conditions and many thousands of dollars are wasted every year from a lack of proper judgment or guidance in making the selection for investment.

The reports made so far to the associations are only to show the character of the investigations being made by the Bureau of Mines and the splendid equipment they have for the work. When these investigations of the operation and control of the different types of kilns and the practical means of fuel and labor saving have been carried far enough, the results will be published and made available to the whole industry. Surely this is a great work and it is hoped that it will induce further appropriations for continuance and thus be fruitful of vast economic improvement in brick manufacture.

The other investigations proposed by Mr. Purdy are also very promising. You remember that at the Indianapolis Convention of 1918 Mr. A. R. D. Johnson spoke of the desirability of getting, in some way, reliable information of improved methods and systems in brick manufacture and that as a result of his speech a resolution was passed creating a committee on "Operating Efficiency" whose duties were to "investigate and present information in regard to improvements in methods and processes of manufacture." Of course, nothing has come of this action. For a committee to get the information would require them to spend considerable time and money visiting plants, and even then it is doubtful if such a committee would be able to get the facts and present

them in such a way as to give confidence in their findings. Such investigations are best made by men of scientific training who have also a good practical knowledge of the brick industry. It seems to be Mr. Purdy's idea that the Research Council of the A. C. S. should undertake to get the facts in regard to all new and improved processes and equipment and keep the manufacturers accurately informed of them. Just how this is to be done we are not told. It certainly cannot be done by correspondence. It must be done in some such way as Mr. Stull is working.

We have had many papers and discussions before the N. B. M. A. on accounting and it is probably well to keep before any body of manufacturers, in a general way, the importance of knowing accurately the cost of every product, though the carrying out of any specific system for any branch of the brick industry is probably a function of the commercial associations. Mr. Lazarus is an authority on the subject and no clearer or more convincing statement could be made of the advantages to our industry of uniform cost accounting. Would it not be well to have Mr. Lazarus' paper printed as a pamphlet for distribution at every convention of the N. B. M. A. and let that suffice? Thus, we wouldn't need to take up any more valuable time of our sessions with a subject that properly belongs to the commercial associations. We need all of our time for discussion of the technics of manufacture.

The next subject on the program, "Drying Brick with Waste Heat from Up-Draft Kilns," by my old friend A. V. Sturgeon, and the discussion that followed, taking in down-draft kilns also, is of such general interest and has so many different applications that a review of this subject will have to be left for separate article in the next issue of *The Clay-Worker*.

TRADE PRACTICES.

THE MERCHANTS' ASSOCIATION of New York has been making inquiry as to trade practices in marketing various products, including building material. The information sought was the method of quoting prices and whether retail prices were named or merely net prices to dealers and consumers. Under the head of building material a report of the survey says:

"Common Brick Manufacturers. — Many manufacturers retail or sell through agent on commission basis. As a rule manufacturers do not 'protect' the building supply dealer. No manufacturers issue regularly a price list.

"Hollow Building Tile Manufacturers. — Most common practice is to give prices to the consumer with specific discounts to the distributor and retailer.

"Face Brick Manufacturers. — Large portion marketed by manufacturer. Otherwise usually price net to dealer with discount for cash."

On the face of these returns, plainly the hollow building tile folks are developing the best line of trade practice, and that is to figure out at least the approximate price to the final consumer and furnish information on this point when called upon to do so, while making specific discounts to dealers and seeking to develop co-operation with the local dealers through encouraging dealer distribution.

Of course where a man is manufacturing hollow building tile, common brick or face brick, he is his own dealer in the

immediate community, for he is in position to make distribution to consumers as well as to cultivate the home trade prospects. In the distant fields, however, it is now recognized that proper development calls for local representation both for soliciting business and for making distribution. The logical man for local representation is the retail dealer in building material, and the interest in developing this dealer distribution idea on the part of clay products manufacturers in the past year or two marks an important step that will make for a much wider use of these products in building operations.

KENTUCKY GROUP MEETING.

A GROUP MEETING of the Kentucky Clay Products Association was held at Henderson, Ky., May 3rd, at Kingdom Hotel, beginning at 10:30 A. M. and continuing through a luncheon session to about 2 P. M.

After registration and roll call the secretary read a digest of the annual meeting and also some news and notes pertaining to new freight rates which are to go into effect July 12. The discussion of the freight rate matter brought out the fact that hollow tile in the south will take the brick freight rate, and brick rates will be readjusted on a more favorable basis, with common brick taking a rate practically 80 per cent that of face brick and hollow building tile. Each of those attending was advised to consult with their railway freight agents on or before July 12 and get more specific information on the new ruling as to freight rate on brick and other clay products.

The roll call developed that most of the brick and tile plants in western Kentucky and in southern Indiana are in action now and have a busy season before them with very light stock on hand. The indications are that the building demand will easily absorb all the brick that can be produced in that territory and that there will be an increased percentage of hollow building tile come into use during the year, too.

Drain tile has done perhaps as well as could be expected in the matter of volume and has developed some unexpected features. The demand for four-inch tile, which had been backward for several years, the tendency being toward five-inch, has staged a come-back this year with the result that some of the plants are short of four-inch tile. The explanation for the come-back in four-inch tile is that farmers, feeling the need for tile, had sought to economize and get their tile cheaper, and for this reason had gone back to the four-inch instead of taking five-inch.

Those present at the gathering were President, F. C. Klutey of the Kleymeyer-Klutey Brick and Tile Co., Henderson; H. Kleymeyer of the Kleymeyer-Klutey Brick and Tile Co., Henderson; John Andres, Secretary-Treasurer of the Standard Brick Manufacturing Co., Evansville, Ind.; George D. and T. M. Dalton, Dalton Bros. Brick Co., Hopkinsville, Ky.; J. W. Bishop, U. S. Bishop & Sons, Seabee, Ky.; J. P. Campbell, R. E. Dunbar and J. B. Greathouse, of the Beal Brick and Tile Co., Reed, Ky.

Heard in the Lobby.

The Kleymeyer-Klutey Brick Co., Henderson, is equipping with a new kiln and meantime is very busy at work with the old kilns. The season started off with them shy of stock and some of their orders had to wait until the burning of the first kiln of the season, which was in process of cooling off at the time of the convention. Mr. Klutey says it looked like a busy season ahead for them. Over at their tile plant, which is looked after by H. Kleymeyer, the pioneer of the brick industry in that part of the country, they have just finished

up a fairly busy season in which they were cleaned out of four-inch tile. They are also making some building tile at this plant, which looks like an interesting departure that will grow.

J. W. Bishop of the U. S. Bishop & Sons, says they have had a fairly good season in drain tile and they are interested in developing a 5x8x12 hollow building tile of which they have been making a feature. They as well as others in that end of Kentucky feel that the coal strike is adding to the prosperity of the country by keeping the western Kentucky mines, which are not on strike, very busy. This ought to mean more building and more demand for brick and hollow building tile.

Dalton Bros., Hopkinsville, say that the outlook is brightening up some in their territory and they are hopeful of a busy season.

John Andres, of the Standard Brick Manufacturing Co., Evansville, Ind., says they are having some car trouble now because of the congestion of switching to the great string of coal cars passing through to and from western Kentucky. In a word, the coal strike and the fact that western Kentucky is not on a strike is bringing a heavy burden of coal traffic through the terminals there and this is giving them some trouble about cars. They say the demand for brick in Evansville and the surrounding territory is picking up and it looks like an active season ahead.

The Beal Brick and Tile Co. is a new undertaking which is just being equipped with machinery and getting ready to start. The Post Office is Reed, Ky., but the plant is at Beal Station, and the purpose is to manufacture drain tile and brick mainly for local needs.

A check up on brick prices in western Kentucky and Evansville shows some stiffening tendency here and there. There is a range of prices all the way from \$10 up to \$16, depending upon location and partly upon grade. This is the average on good common brick; face brick ranges from \$20 to \$25 upward.

BRICK HIGHWAY FOR INDIANA.

CONTRACT for the construction of the first brick road in Indiana to be built under the direction of the State Highway Department has just been let at a cost of \$219,916.78. Indiana was one of the last states in the union to establish a highway department, and while many miles of brick roads have been constructed in the past by the various counties, the contract just let is the first action of this kind by the state.

The section to be paved with brick is 6,897 miles long and extends from Putnamville to a point 1½ miles east of Mt. Meridian. It is a part of the old National Road which runs entirely across the state, extending from Cumberland, Maryland, to Jefferson City, Missouri, and is the principal traffic route between Indianapolis and Terre Haute.

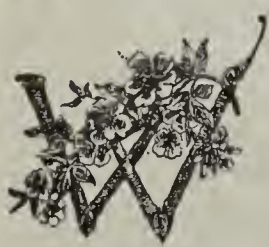
When the National Government planked the road west of Indianapolis with white oak in the neighborhood of 75 years ago, vitrified paving brick as they are now known and manufactured, did not exist in this country. Had they existed, Indiana motorists today might be rolling along over brick roads nearly a century old as they are in Holland, where such roads, still in service, were built by Napoleon.

Decision of the state highway department to use vitrified brick on this road is in accordance with the recent announcement by Governor W. T. McCray to the effect that brick roads would be included in this year's program.

The bid for brick is \$111,916.78 more than the low bid for concrete on this section. The design calls for 5 in. concrete base, 3 in. vertical fiber brick and asphalt filler. The work will be done by the Carpenter Construction Company of Terre Haute.

Written for THE CLAY-WORKER.

WISCONSIN AND MILWAUKEE BRICK AND BUILDING NEWS.



WITH EXCELLENT WEATHER conditions augmenting the biggest building boom Wisconsin has witnessed for several years, churches, parochial schools, factory buildings, municipal buildings, hospitals, university additions, bank buildings, hotels and hundreds of brick residences are under construction in Milwaukee, Fond du Lac, Oshkosh, Stevens Point, Lancaster and other Wisconsin cities. Brick jobbers and manufacturers of clay products are enjoying an excellent volume of business as summer approaches. Although a comparatively small number of large contracts feature the building programs of many cities, an extra large number of medium orders counterbalances the year's average and puts it far in excess of the same period in 1921. Milwaukee, a large coal distributing center for the Northwest, has little to fear from the pinching effects of the coal strike. In some states manufacturers mine their own coal beneath clay beds and declare they are well supplied with fuel. Men working these mines are employes of the brick yards and are not members of the striking unions.

Among the large jobs pending in Wisconsin brick circles are: a seven story bank building at Sheboygan requiring 300,000 brick; a seven story hotel at Fond du Lac, 200,000 face brick; a municipal building at Lancaster, 150,000 face brick; Emil Company Apartment at Stevens Point, 150,000, Stevens Point Hotel, 100,000 and Moose Lodge, 60,000; Farwell Memorial Hospital at Madison, 200,000 brick; brick and tile addition to Mercy Hospital, Oshkosh, 500,000 face brick; Milwaukee county hospital, 1,800,000 face brick; a five story addition to the American Exchange Bank, Milwaukee, 300,000 brick and the M. U. Dental college, 175,000 pressed brick.

Reclamation work to make swamp land tillable has been started in 33 of Wisconsin's 71 counties, it was announced at the college of agriculture, Madison, Wis. Farm drainage boards have been appointed in each county and plans laid for extensive drainage. Shale tile, or hard burned clay tile is available for use in Wisconsin, according to the state drainage engineers who frown upon the use of concrete tile for outlet drains.

The Marshfield Brick Co., Marshfield, Wis., is making preparations to open for the season after a suspension of business last fall. Over thirty men will be given employment when the company opens. Advance orders insure a busy season.

Eleven bids were submitted for the paving of five of downtown streets of Ashland, Wisconsin. No definite decisions have been made by the city council as yet because the bids include so many things supplementary to the paving, such as curbing, man holes and excavation work that the board can not choose low bids until all reports are tabulated. On paving alone the lowest bid with bitulithic is \$3.55 per square yard and with brick the lowest is \$3.39 per square yard.

Chippewa Falls, Wis., utilizes waste brick from its schools and public buildings for facing on sand hills to prevent wash-outs from heavy rains. A. W. Gore, street commissioner has used 135 loads of broken bricks on the city pump station road and 100 loads on Olive street. There are about 500 loads of waste brick still to be used as filler for new roads into Chippewa Falls, according to Mr. Gore.

Burnham Brothers Brick Co., Milwaukee, Wis., submitted an offer to the Milwaukee common council, through city real

estate agent Edward Grieb, to sell to the city 20 acres of land near its Kinnickinnic avenue plant and 15½ acres at Fifty-first and Vliet streets for \$50,000. The assessed value of the property is \$63,600.

The Wisconsin Clay Products Company has been recently incorporated by Kenosha, Wis., business men with a capitalization of \$100,000 and will commence operations June 1. Common and face brick will be manufactured by the new company at its plant on the Burlington road near Kenosha, Wis. Experts who have analyzed the clay to be used by the company have declared it to be the equal of the famous Porter, Ind., clay. The district between Evanston, Ill., and Milwaukee will be supplied with brick by the new company and many large advance orders have been filed, insuring the company active work for its opening months. Officers of the company are: Joseph Orth, president; Gottlieb Schaefer, vice-president; Michael Lauresen, secretary and Charles Tyson, treasurer.

Contracts have been let by the J. J. Breister Co., Fond du Lac, Wis., for complete brick manufacturing machinery to be installed in the company's new brick plant located on the site of the Fond du Lac Brick company plant. The new company owns 102 acres adjoining the plant, said to be excellent river clay land. Operations are expected to begin within a few weeks. Standard size bricks, known as "mud" bricks will be manufactured. J. J. Breister, of Fond du Lac, is president of the new company and associated with him are four sons.

Milwaukee Face Brick Company, Milwaukee, Wis., is constructing a one story factory, 52 by 68 feet at the corner of Booth and Becker streets, Milwaukee. It will be constructed of ten inch brick and the estimated cost is \$800.

Wisconsin Face and Fire Brick Co., Milwaukee, Wis., was awarded the contract for furnishing face brick to the Sheboygan, Wis., high school, second unit. A. BADGER.

THE CANADIAN TRADE.

Our commerce reports indicate that for a year or two now Great Britain has been getting more of the Canadian trade in clay products than the United States. It is not as bad as it may sound, however, from a brick standpoint, because the trade that England takes the lead on is in pottery products. Table ware is a big item in compiling these total imports, representing about 73 per cent. of the total, and it is this which enables the mother country to show up conspicuously in competition with us in the Canadian trade. When we get down to brick and tile the United States leads and practically holds the trade. During 1921 we shipped building brick into Canada to a total value of \$126,765, fire brick and silica to a total of about a million dollars. Also we made a fairly good showing in hollow building tile, sewer pipe, flue linings and flooring tile. In china table ware we made a poor showing in comparison to England, our shipments of table ware to Canada amounted to only \$178,275 as compared with \$2,791,331. There were a number of other pottery products shipped to Canada but in practically all the pottery list the United Kingdom led us. In brick, hollow building tile and refractories, however, our trade with Canada made a very good showing and promises to do even better this year.

The census report shows that in 1920 there were 41,609,192 people gainfully employed. This represents half the total population ten years of age and older of both sexes. About half the workers are distributed between the manufacturing industry and agriculture while the balance are in professions, transportations, domestic and personal service, mining and so on.

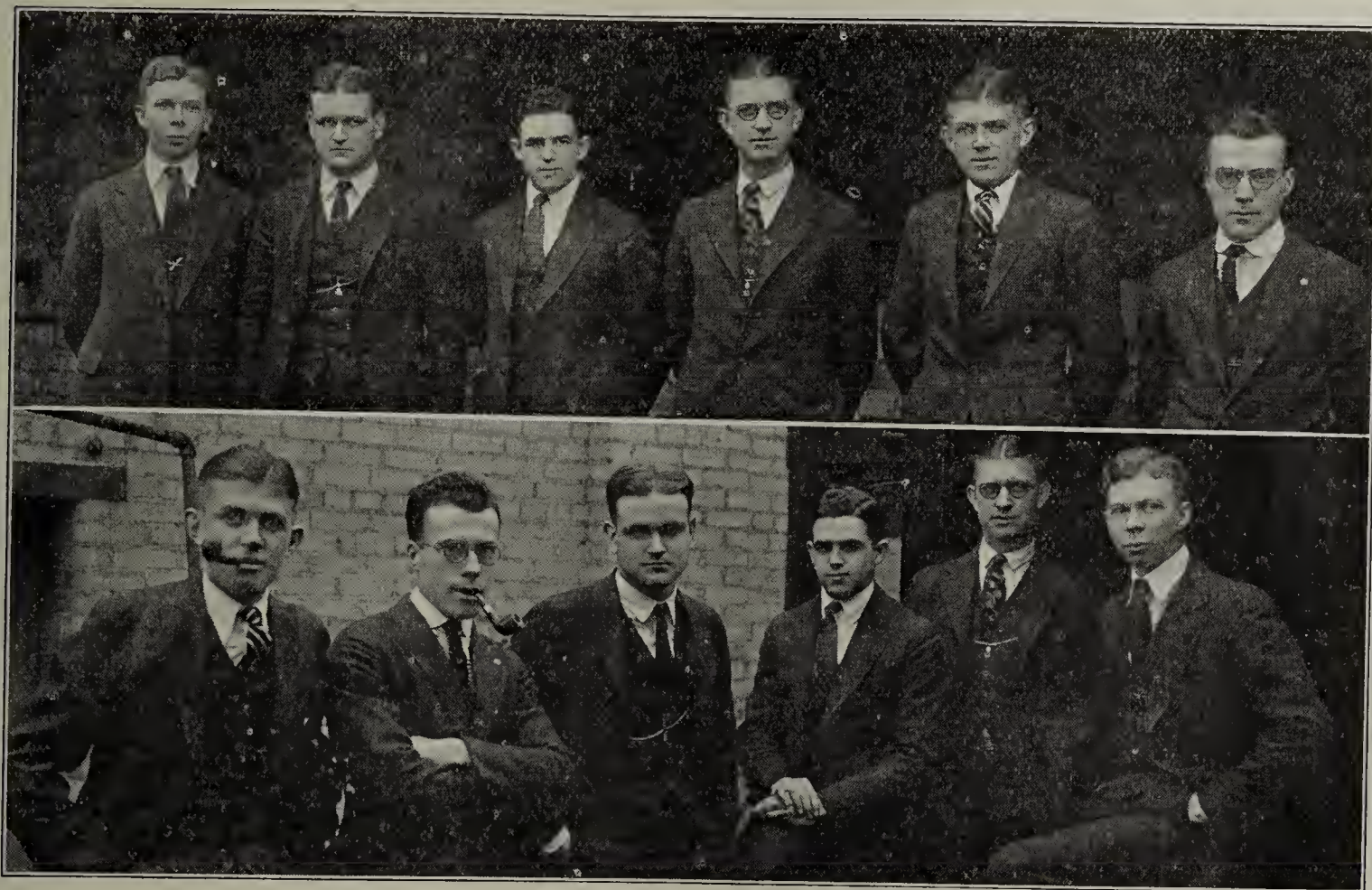
THE JOINT RESEARCH WORKERS.

EARLY LAST YEAR plans were completed by four organizations in the clayworking industry to develop some joint research work. The four associations were the Hollow Building Tile, Common Brick, Face Brick and Paving Brick Associations, each of which agreed to join in supporting research work for two years to be carried on by the Bureau of Standards and the Bureau of Mines.

At the recent annual meeting of the Hollow Building Tile Association, R. T. Stull of the U. S. Bureau of Mines, at Columbus, told something of the progress that had been made in this good work. The field work which consists of investigations pertaining to kilns and to the burning of brick and hollow building tile, was assigned to the Bureau of Mines

room which is specially equipped, partly through the courtesy of instrument people who have either contributed or loaned instruments for their use. Then comes the sleeping bunks, and the dining room, while in the other end of the car is a kitchen and the water and lighting unit. The car has a fairly complete gas power generator which furnishes its electric light and also operates a water works system, the whole thing being suggestive of the individual units furnished for home lighting and water works. The crew of field research workers consists of six men and a cook. The active six who are doing some splendid research work which will make history in the clayworking industry are P. S. Bachman, Columbus, Ohio, foreman; R. C. Zehn, Columbus, Ohio; E. B. Baker, Fairmount, Ill.; A. R. Mumford, Boston, Mass.; R. F. Lunger, Danville, Pa., and W. E. Rice, Alliance, Ohio.

Just what these research workers are doing and where they are, from time to time, is not supposed to be made pub-



Two Group Pictures of the Joint Research Workers. Upper Picture, Left to Right: R. C. Zehn, Columbus, Ohio; P. S. Bachman, Columbus, Ohio; R. F. Lunger, Danville, Pa.; F. B. Baker, Fairmount, Ill.; W. F. Rice, Alliance, Ohio; A. R. Mumford, Boston, Mass.

under the supervision of the Ceramic Experiment Station at Columbus. The crew for research work was gotten together last summer with P. S. Bachman, of Columbus, as foreman, and it has been actively at work ever since, visiting different points and making tests and recording these and making out reports which go forth to the Bureau of Mines Station at Columbus and to the various associations which have joined in supporting this work.

As Mr. Stull explained, it was difficult to get suitable places for lodging and meals and so they decided that the only solution to the problem was to get one of the Bureau of Mines pullman cars and fit it up for this research crew. They did this and employed a cook, so this crew doing field research work now has a specially equipped car, a specially equipped laboratory car, the U. S. Bureau of Mines car, Holmes.

The car equipment consists of an office in one end, then comes toilet and shower bath, clothes closets and dark room, while in the center of the car is the main laboratory work

lic, as they are on a mission of developing knowledge and specific information, not developing publicity. It may be said without violating any confidence, however, that they are engaged in checking up the results of kiln work at different plants to get at specific data as to practices at present basis making for both fuel economy and for better results in burning. The work includes temperature records of various kinds, fuel reports, moisture tests, porosity testing, and practically all things considered of importance in connection with kiln work. Their investigations do not extend beyond the kiln into plant operations generally, though they do seem to include some analysis of clays and shale as well as of fuels. Their work, however, is centered upon burning and getting a fuller knowledge and a more positive control of burning operations.

The method followed usually seems to be that of having a kiln of ware burned as it has been burned regularly at a given plant using the same method of firing and everything.

Records are kept of this during the various stages of burning, of the fuel consumption, chimney gases and so on. Then a second kiln is prepared and fired under instructions and suggestions from the research crew itself and it is checked up in the same manner. Not only is there checking up on fuel, temperature, and burning results, but they are also getting a record of radiation losses which will undoubtedly prove of great value.

Retiring President H. M. Keasby spoke advisedly when he said in his annual report at the hollow tile meeting last January that probably the most striking and important activity entered into during the past year was that of inaugurating the work of the joint research committee. It is undoubtedly an important movement and when this crew of research workers gets through with its two years of tests and data compiling, the clayworking industry will have information that will without doubt be of great value and constitute a great text book or reference work for kiln burning.

So far the work has been confined to a study of direct burning kilns at different plants in various parts of the

crew of research workers is not only a very busy and active crew, but they seem to relish the work and to be enjoying life as well as making and recording some valuable history for the clayworking industry.

STULL BECOMES SUPERVISING CERAMIST

On May 1, R. T. Stull was relieved of the superintendency of the Ceramic Experiment Station of the Bureau of Mines at Columbus, Ohio, and made Supervising Ceramist for the bureau as a whole. He will act under the direction of the Chief Mineral Technologist and will have supervision in technical matters in ceramics, and such related investigations of non-metallic minerals as may from time to time be assigned to him. Mr. Stull will have administrative as well as technical supervision of field work in the kiln investigation carried out in co-operation with the four heavy clay products associations, including the laboratory car "Holmes" and its crew. Until otherwise ordered, he will make his headquarters at Columbus, Ohio, but his services will be fully available



U. S. Bureau of Mines Laboratory Car at Coral Ridge, Ky.

country and it will probably take the full year to complete this. During the second year they hope to include in their research work a study and checking up of producer gas kilns as well as those burning fuel direct.

As the work progresses at each plant, they chart the kiln, tabulate the information developed from experiments, and prepare their reports which are submitted to the Columbus Station of the Bureau of Mines and to the several contributing associations which are supporting the work. Eventually it will all be made available to the public in printed form but for the present it is not considered wise or desirable to publish details of what they are doing or even announce the itinerary of the car and the place where they are conducting experiments. This crew of earnest research workers were intercepted and interviewed while carrying on research work at the plant of the Coral Ridge Clay Products Co., near Louisville, Ky. It was here that the picture of the car was secured with one of the Coral Ridge Hills in the background. The interior views and the pictures of the working crew were taken elsewhere and were supplied by R. C. Zehm. This

for consultation by all branches of the bureau concerned with ceramics. George A. Bole has been designated Acting Superintendent of the Ceramic Experiment Station, at Columbus, Ohio.

FELDSPAR INVESTIGATIONS.

R. B. Ladoo, mineral technologist of the Bureau of Mines, has spent some weeks visiting feldspar mines and quarries in the Western states. Mr. Ladoo has been gathering data intended to make available to all producers information as to improved methods of quarrying and preparing feldspar for market, with special regard to economy of production and elimination of waste.

PHYSICAL PROPERTIES OF TETRYL.

Carl A. Taylor and W. H. Rinkenbach, assistant explosives chemists of the Pittsburgh, Pa., Experiment Station of the Bureau of Mines, in a study of the physical properties of

tetryl, have completed determinations on the solubility of tetryl in alcohol, carbon tetrachloride and carbon bisulphide at the melting point of ice and at the boiling point of the mixtures.

ILLINOIS UNIVERSITY ISSUES BULLETIN ON SOUND PROOF PARTITIONS.

The demand for quiet rooms in hospitals, hotels, and office buildings, the desirability of insulating music studios and other rooms where disturbing sounds are produced, and the necessity for solving other problems for the control of noise have led to repeated requests from architects and builders for reliable information on effective methods for insulating sound. Although present information on the subject is incomplete, Bulletin No. 127 of the Engineering Experiment Station of the University of Illinois, "Sound-Proof Partitions," by F. R. Watson, collects and presents the available information in a systematic way, giving the methods and results of various investigations relating to the action of materials on sound, describing practical installations of soundproofing, and setting forth in accordance with existing knowledge recommendations that may be applied where sound insulation is wanted.

While many things may be learned from experience and much may be gained from additional theory, enough has been revealed to give encouragement to the belief that soundproofing may be prescribed in the future with some of the certainty that now attends the acoustic design of auditoriums.

Copies of this Bulletin No. 127 may be had without charge by addressing the Engineering Experiment Station, Urbana, Illinois.

NOTES OF CERAMIC INVESTIGATIONS OF UNITED STATES BUREAU OF MINES.

Work has been completed at the Ceramic Experiment Station of the Bureau of Mines, Columbus, Ohio, on bentonites, which are probably aggregates of alkaline hydrated silica and kaolinite. Some of their characteristics are conchoidal fracture, high colloidal content, high water of plasticity and drying shrinkages. Their burned color varies from light buff to brown.

At the Columbus, Ohio, Experiment Station, the Bureau of Mines has begun laboratory work to determine the rate of casting and dry strength of a cast body, using the kaolins under investigation together with English china clay, Florida kaolin and others. The electrolyte used is a solution of $\frac{1}{2}$ sodium silicate and sodium carbonate.

A method for distilling clay similar to the manner in which coal is distilled has been devised by engineers of the ceramic experiment station of the Bureau of Mines. The object of this method is to collect the products of distillation and determine the gases given off.

The porosimeter developed in the studios of the oxidation of ceramic wares during firing, being conducted at the Columbus, Ohio station of the Bureau of Mines, has proved a great aid in the control of the latter part of the burn, more especially for paving blocks where a low porosity is essential. A preliminary survey of the relation between porosity, vitrification, and rattler test has been made.

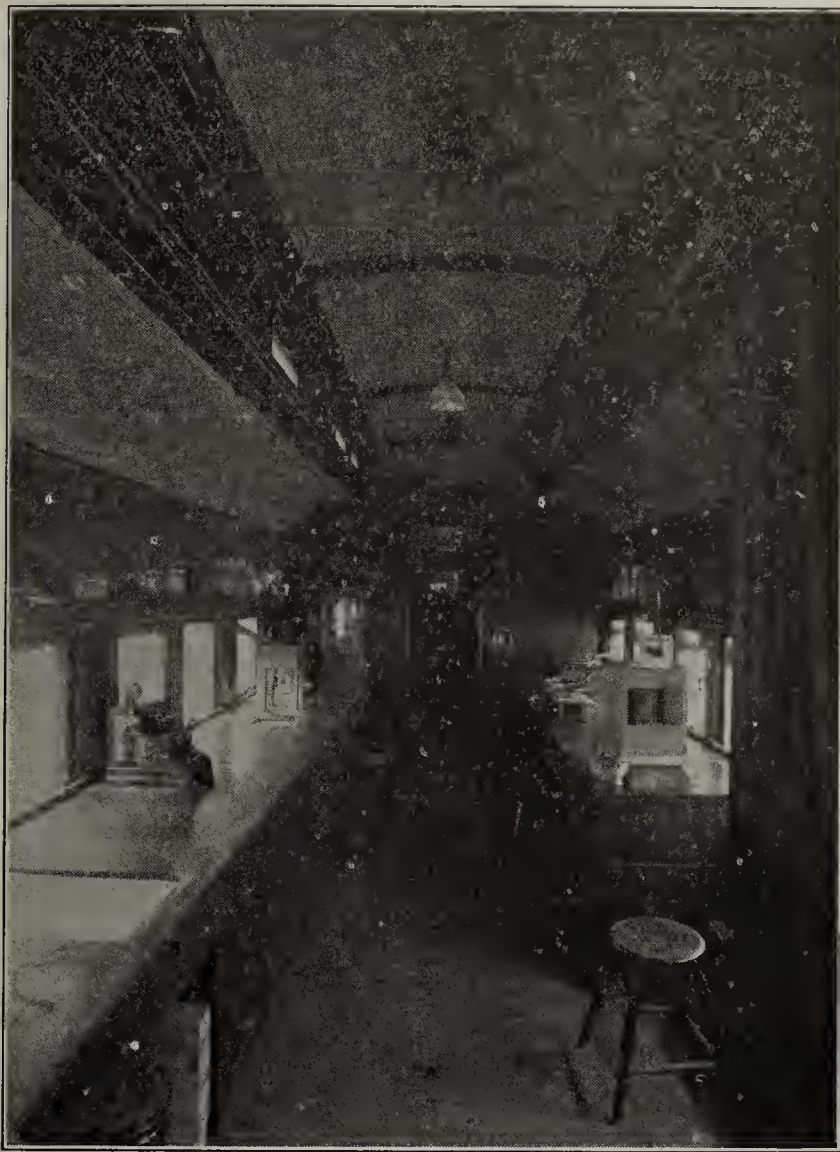
At the Southern experiment station of the Bureau of Mines, Tuscaloosa, Ala., in the study of heat treatment of fillers, work has been performed on raw clays ground in pebble mill showing 95 per cent and 90 per cent through 300 mesh. Raw clays that settled clear after standing 24 hours in 0.1 per cent starch solution, after heat treatment settled clear up to 500° C., 300° C., and 750° C., but remained cloudy at about 500° C., 400° C., and 1,000° C.

SULPHUR IN COKE.

A. R. Powell, physical organic chemist of the Bureau of Mines, in the course of a physico-chemical study of sulphur in coke, has found that ferrous sulphide decomposes in coke when cooled, the iron being soluble in HCl. An isotherm indicated that sulphur remained in the coke in the absorbed form. After acid extraction and heating in a tube some sulphur was distilled and collected on the cold ends.

DR. MOORE GOES TO EUROPE.

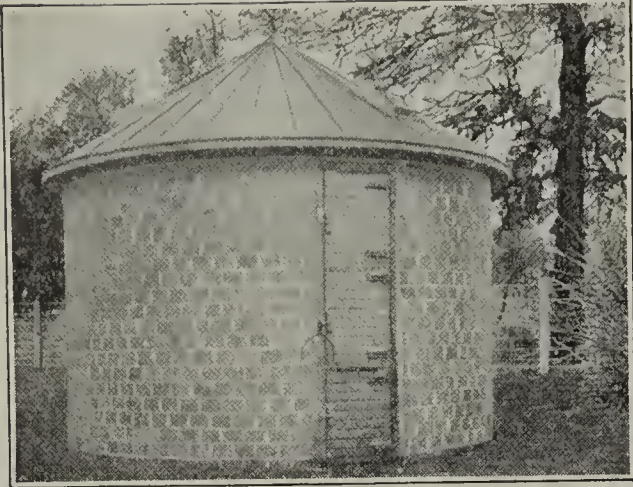
Dr. R. B. Moore, Chief Chemist of the Bureau of Mines, sailed on May 6 for England, preparatory to spending two months in various European countries for the purpose of ob-



Interior View of U. S. Bureau of Mines Laboratory Car "Holmes," "Somewhere in the United States."

taining data desired in various problems in the work of the Bureau along chemical and mineral technology lines. Dr. Moore will also represent the Chemical Warfare Service and other Federal bureaus engaged in chemical research. Dr. Moore will spend some time in England, Germany, France, Austria, Czechoslovakia, Holland and Belgium.

One of the best review discourses on the open shop and its relation to industrial liberty is one reaching us in pamphlet form by Walter Gorden Merit, and published by the League for Industrial Rights, 42 Broadway, New York City. Mr. Merit reviews sanely and at considerable length the principles and practices of both the closed shop and the open shop, and makes out a splendid case in favor of the open shop for industrial liberty and progress. Those desiring copy of this splendid review should write Lawrence F. Sherman, Executive Secretary for the League for Industrial Rights, 42 Broadway, New York City.



FACE TILE WALL CORNERING.

WHERE TILE walls are used which make their own face instead of being plastered over with stucco or faced with brick there are two ways of making corners and facing around openings. One is to use brick to fill in and make the face and corners, and the other is to use short sections of tile designed and cut specifically for this purpose which will harmonize in face appearance with the tile wall itself. Plainly the latter is much better as well as more consistent and in keeping with the true spirit of the hollow tile wall. The brick has entered more as a makeshift before face tile ideas had gained much headway and it is about time to put it in the discard. Here and there a few prefer brick corners to furnish a sort of architectural variation, but in the main it is better all around to make the corners and the wall opening of special tile sections cut for this purpose which will fit into and harmonize with the general face appearance of the tile wall. This is one feature of hollow tile exploitation that is receiving some of the attention it deserves now and is being exploited with details showing how to make the corner construction and also how to face up around window and door openings.

TILE EXPLOITATION.

THE ACTIVE field for fruitful exploitation of hollow building tile now is in the agricultural districts. That the trade realizes this is being evidenced by some good trade literature being gotten out with this object in view.

One splendid example is furnished by the Western Brick Co., of Danville, Ill., with a pamphlet of standard catalogue size on hollow building tile and its uses and adaptability in which special attention is given to farm uses and to the building of garages and other outbuildings. Not only is there shown illustrations of hog houses and types of barn wall construction, but quite a feature is made of garages and outbuildings, and this should lead directly into the exploiting of fireproof building material for tractor and implement sheds and other new types of buildings called for now by modern implements and methods of farming.

The pamphlet of the Western Brick Co. is profusely illustrated with drawings which show in a practical manner how to work out the details of construction and in this it is filling one of the important needs of the day. The essential thing to get a wide use of hollow building tile in agricultural fields is a campaign of educational exploitation which will carry with it not only information as to the quality and merits of tile, but will also include practical information as to details of its use in different walls of different kinds of construction from home and barn buildings to basement work, and even

HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

chicken houses and other light structures on the farm.

There is room for most every manufacturer of hollow building tile to develop a larger volume of trade in his immediate surroundings by a more active exploitation of tile in this manner for its many practical uses on the farm.

PRESIDENT HOWINGTON.

THE HOLLOW BUILDING Tile Association members did not make any mistake when they elected James T. Howington of the Coral Ridge Clay Products Co., Louisville, for its president at the recent annual meeting. Mr. Howington is not only a man of sterling business qualities, but he is giving to the association the same earnest atten-



James T. Howington, President Hollow Building Tile Association, Louisville, Ky.

tion that has resulted in making the Coral Ridge Clay Products Co. plant the best clayworking plant in Kentucky. At the time of this writing he is on a trip to a conference in Washington in the interest of the Hollow Building Tile Association, and previously he had made an extended trip through Iowa and Missouri on association work, where he was keenly interested in the progress being made in pushing hollow building tile for farm uses. Mr. Howington is an ardent advocate of the doctrine of continued research work and the free exchange of information and ideas between those engaged in the business, and this is plainly the spirit which makes for progress and better understanding. He is the first man south of the Ohio River to be elected President of the Hollow

Building Tile Association, and the south country is proud of the fact that it now has its representation and of the caliber and type of man selected for the honor.

BURNING HOLLOW TILE IN DOWN-DRAFT KILNS.

THE first essential in getting good burns in any kiln is a dry kiln bottom. This is neglected in many kilns and should be corrected. We have seen kilns with six inches of water in the flues and the superintendent remarked that it was of no consequence because it soon evaporated after the fires were started, but this is only true of the surplus and visible water. The heat from the kiln will evaporate this, and the bottom apparently become dry but not so. The ground water is pressing into the brick work and is being carried up to the floor level by capillarity and the heat required to continually evaporate it is being robbed from the kiln floor in consequence of which it is difficult to get a satisfactory temperature in the bottom of the kiln without overburning the top. At best we get a wide difference in the hardness and color of the ware in the top and bottom of the kiln. A sponge set in water may be dried on top but eventually all the water under the sponge must be evaporated, and this is equally true of a brick kiln.

The second essential is a satisfactory kiln bottom. For hollow ware the floor should be fully perforated and the under collecting flues provided with inlets to give a good distribution of the gases over the kiln bottom, and the outlets from these flues into the main draft flue should be so restricted as to give proper draft conditions. This essential is beside the question in this article, and we will not discuss it, especially since it has been fully covered by Mr. Lovejoy in "Burning Clay Wares."

If the kiln bottom is fully perforated, one cannot go astray in setting hollow tile, and this feature of the burning needs no discussion.

Every factory should have a pyrometer. It will pay for itself in a short time and a modern factory would no more do without it than it would dispense with the steam gauge on the boilers. One might rely upon a pop valve to fire a boiler but who would do it when steam gauges are available?

It is not necessary to have a recording pyrometer—in fact we are inclined to believe that the work is better carried out without the recorder, in that without it, the operator will use some kind of record card which is more readily studied than the recorder sheets. Some use cards upon which the temperatures are entered hourly, or at longer intervals, and on such a card the story of the burn may be read at a glance.

It is customary to enter on the card the temperatures which are to be attained at stated intervals and this is the guide the burner must follow. We prefer a cross section sheet for the record, as herewith illustrated, and on this sheet the burner dots the temperature and time at the proper cross section. Any increase or falling off of the temperature is immediately shown in the pitch of the curve.

It has a decided advantage in correcting the faults of the burning and reducing the time to a minimum. If the pyrometer recorder sheets were plotted in curves, there would be shown many flat and steep places which could be corrected in subsequent burns. The curves are especially valuable in reducing the operation to a minimum time.

This is illustrated in the accompanying curve sheet but in this curve the opportunity for illustration is limited because we have started with an excellent curve for hollow ware. This curve is shown by the cross marks (x). If the burns following this curve are without fault and there is no indica-

tion that the limit is reached, then one could stiffen up the curve starting around 600 degrees as shown by the curve of round dots. This would shorten the burning about six hours. If no fault develops one could retain this new curve as a guide and perhaps still further shorten the time in this part of the burning. He could likely go back to the 300 degree level and advance the temperature to 25 or 30 degrees per hour instead of 20 degrees as shown, and finally many clays will stand faster water-smoking than given in the curve, especially wares that have been dried in tunnel dryers in which the ware was subjected to temperatures around 200 degrees. The kiln temperature may be advanced to 200 degrees, in such instances, as quickly as it is possible to reach such temperature in the kiln.

Many manufacturers are satisfied with their kiln operations because the kiln results are satisfactory, but a study of the burning curves would often show that there is room for economy without any sacrifice in the results.

Can one who has no knowledge of the clay to be burned, though experienced in burning other clays, instruct another how the clay in question should be burned? Some clays are so safe burning that it is possible to burn them from start to finish in 24 hours, and others are so troublesome that five or six days are required to burn hollow tile and correspondingly longer time for bricks. If we were experienced in the 24-hour type of clay and should instruct tile makers to follow this procedure we would be condemned by the majority of clay manufacturers, and on the other hand if we follow the long safe burning procedure we consume unnecessary time and excessive fuel for many clays.

An average time for hollow ware burning in down-draft kilns is around 72 hours, but in working with an unknown clay in the first burnings we would go slow and gradually lessen the time as above described.

The burning may be divided into three stages, each of which requires special firing conditions.

The first step in the burning is the water-smoking as shown in the chart. A small fire should be started in the furnace ash pits and gradually increased as the water-smoking advances. Wood is the best fuel for this purpose, but it is no longer available in many districts. Coke or smokeless coal is better than bituminous coal in that there is less danger of choking the floor perforations, especially where the ware is none too dry as set in the kiln and the kiln bottom is more or less damp. In this early stage we often have to go slower than the ware requires in consequence of the danger of "sooting" the floor perforations. In hollow ware there is little danger of sooting the ware but in closely set bricks this is often a serious trouble.

If we are working with an unknown material we would take several days, at least three, for the water-smoking, and only advance the fires as the vapor from the top of the stacks became thin, indicating that the moisture for that temperature is pretty well off. Water evaporates at 212 degrees but this temperature will not remove all the moisture from clay wares. The clays contain salts and acids from which the water can only be driven off at higher temperatures, and the final trace of moisture does not leave the ware until temperatures of 400 degrees or even higher are attained.

However, the free moisture is practically all off at 300 degrees or less, and the stack vapor will begin to be thin. When this occurs the chief danger in the water-smoking is past and the temperatures may be advanced. Toward the end of the water-smoking the stack vapor will begin to be tinged with blue and the blue color,—commonly termed "blue smoke,"—will become heavier as the temperatures advance.

The "blue smoke" is the beginning of the oxidation period in which the carbon and sulphur in the clay are burned out.

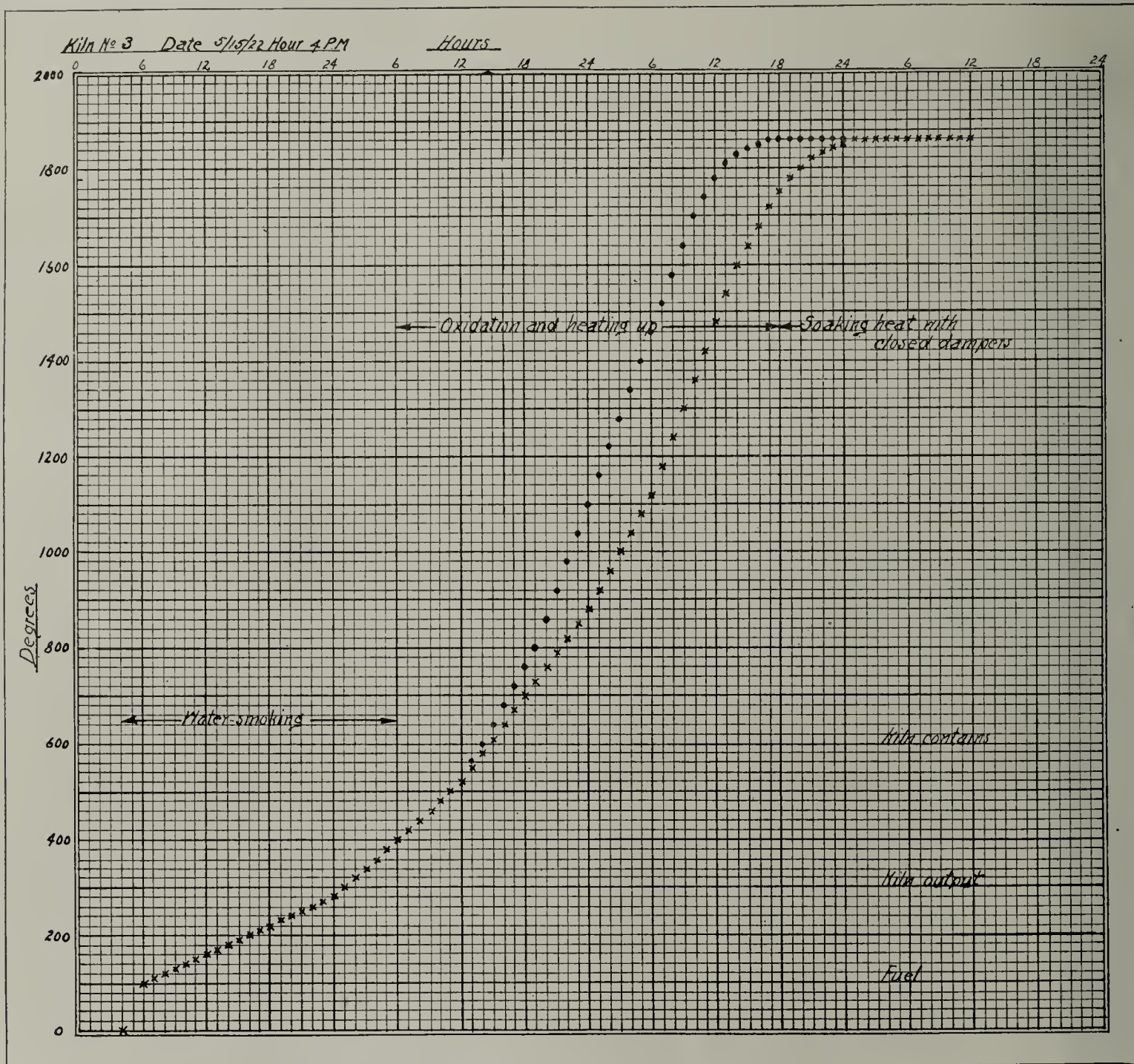
These constitute the "blue smoke." If the clay or shale is black or dark gray it contains carbon, and such black or "blue" clays often contain sulphur as iron pyrite. These are serious elements in the clay mass and they must be removed before the ware begins to develop a permanent bond, otherwise the ware will be black cored and bloated. As long as the blue smoke continues heavy the temperatures should not be advanced too rapidly.

The kiln will begin to show a faint red color at temperatures above 800 degrees and if there is little or no "blue smoke" at this temperature, it is usually safe to raise the heat as fast as possible. In the firing, then, we will raise the

clay and this requires excess air.

The final stage in the ordinary burning is the "soaking heat," or more properly, working the heat to the bottom of the kiln. We begin to work the heat to the bottom shortly before reaching the final temperature on top,—the curve indicates top temperatures,—or if working without a pyrometer, when the heat in the top peep hole in the upper part of the wicket shows the heat is fully across the kiln and the sample piece from the top peep hole is becoming hard. Even when using a pyrometer, one should use trial pieces to determine the development of the ware in the center and bottom of the kiln.

When by experience, or by trials, we are satisfied that the



Curve Sheet of Burning Hollow Tile in Down Draft Kiln.

fires from the ash pits to the furnace bars when or shortly after the temperature has reached 300 degrees, or if one is working without a pyrometer when the water-smoke from the stacks has become very thin. If the furnaces are of the grateless or inclined grate bar, the advance simply means to increase the firing and build up the fires to a full fire, keeping in mind that the attainment of a full fire depends upon the volume of blue smoke. Throughout the water-smoking oxidation, and heating up, the draft should be as strong as it is possible to get, and the fires should be kept as clear as possible, allowing an excess of air to enter either through the furnace doors or over the top of the fuel bed. It must be remembered that we are trying to oxidize the minerals in the

top of the kiln is finished our aim should be not to get any advance in the temperature on top but instead to hold it at the finishing temperature until the heat is worked to the bottom. The top temperature will advance slightly in spite of anything we can do but after the first few hours we can hold it very steady with a pyrometer but without a pyrometer one is just guessing and often guesses wrong.

With some clays having a short burning range, especially limey clays, we are so near the limit of safe burning of the clay that it is difficult to hold the top within this limit, and usually some sacrifice is made in the bottom to save the top.

The heat can be driven to the bottom by closing the kiln dampers to a very small outlet. The rule we have followed

in closing the dampers is to reduce the stack opening until we get back-draft in the furnaces and then raise the dampers until the back-draft barely ceases. We will find that we now have pressure in the kiln. Where before we could look into the top sight hole without trouble in consequence of the in-draft, we now must be careful because of the out-pressing heat. Regardless of the draft of the furnaces, there should be a back pressure at the level of the top sight hole, and the draft through the bottom sight hole should be weak,—a back-draft, if possible, but one seldom gets a back-draft from the bottom sight hole unless the ware of kiln floor is choked and in this instance the draft would have been sluggish all through the burn. When the damper is lowered it will be found necessary to lessen the amount of coal put on the fires, otherwise the heat will be greatly advanced on top and ruin the top ware.

Usually we will have the kiln under full fire at the end of 30 hours or shortly after entering the oxidation stage but we should not during the "blue smoke" stage close the furnace mouths, assuming that the furnaces are the inclined grate or grateless type,—instead fire lightly and leave some space over the top of the fuel at the furnace mouth. In the later heating up period we close the furnace mouths lightly with the fuel and as the fuel burns and settles a small space is opened above the fuel. One should fire lightly and frequently,—half-hour periods with corresponding amount of fuel are better than longer periods and heavier firing.

In firing the burning fuel should be broken down with the shovel and the space filled and the furnace mouth closed with not more than three,—often two,—shovels of coal. This firing should continue to the end except that during the soaking period the fires are broken down in less degree and correspondingly less fuel is added.

Unless one has had experience with the clay and knows how it will behave and what it will stand, his maxim should be "GO SLOW."

It must not be assumed that because our chart shows the final temperature to be 1,860 degrees, that this is the proper temperature for all clays. Many common clays and shales finish around this temperature but some clays finish below 1,800 degrees and others require temperatures above 2,000 degrees.

The chart is drawn for hollow tile, and brick burning will be much slower because of the heavier unit mass and the close setting. One will not be far from an average common brick burn if one follows the same chart except that each time line represents two hours instead of one, which would be 156 hours for the burn.

CAREY P. ELLIS.

PACKING BRICKS IN CARTONS.

The Los Angeles Pressed Brick Company has recently placed an order for nearly 1,000,000 pasteboard cartons for use in shipping the finer grades of brick. The cartons are made of heavy cardboard and manufactured by a local box manufacturing company. They resemble the cartons in which butter is packed, and the bricks are usually packed in them by the girl employees of the brick company.

In spite of the cost of the cartons, the brick company consider the individual container for each brick to be a saving, as they prevent a great deal of breakage in shipping, being, as has been stated, "almost foolproof."

This company, besides being one of the pioneer brick-making concerns in the state of California, has done excellent work in developing new clay fields in the southern part of the state. They have now acquired some new clay property in San Diego county, and will shortly begin the manufacture of new and unusual color effects in brick made from this

clay. By their ingenuity and resourcefulness, they have turned out bricks from some of their other clay fields that differ from any other in character and appearance.

MAKING COAL ASHLESS.

THERE IS NOW a story going the rounds to the effect that a new fuel is being developed through treating pulverized coal so as to eliminate the ash content. This new fuel preparation is called Trent Amalgum because the process was developed by Walter E. Trent, formerly of the United States Bureau of Mines, who, it is said, has built a plant of commercial proportions at Alexandria, Va.

The process as outlined is to crush the coal, then put it through a process of washing in water to eliminate the ash content, and through water and oil to get an amalgum with the carbon of the coal and oil, which it is said will not amalgamate with the wet ash.

It is said that the process yields good results with practically all grades of bituminous coal and that the product has a 42 per cent steaming advantage over the best steaming coal available.

While attention at present seems to be centered upon power producing with coal of this kind, especially for transportation purposes on land and sea, if it proves practical for this it should also prove interesting as a possible new fuel for burning clay wares.

NEW BRANCH OF SERVICE FOR MEMBERS OF THE C. B. M. A.

THE Common Brick Manufacturers' Association of America has now made the necessary arrangements to render one more service to its members.

Mr. Harry W. Conway, formerly connected with the Cleveland Builders Supply and Brick Co., The Barkwill-Farr Co., and The Farr Brick Co. of Cleveland, Ohio, in the capacity of Auditor, will devote his entire time to the work of the Association in the capacity of Field Secretary.

Mr. Conway has specialized in cost accounting as applied to the brick business, and has attended two of the Association's annual conventions at which he delivered masterful addresses on this subject. Mr. Stoddard, the Secretary-Manager of the Association says he considers Mr. Conway an expert in this line and perhaps the best suited to the work which he will follow of any man in the country.

In this capacity Mr. Conway will visit the plants of the members and render them a limited service, assisting them to get a system of accounting started, and give such counsel, advice and suggestions as will be most helpful to the member, entirely without cost to the member.

Should any member feel the need of special or extra assistance along this line, Mr. Conway while in the vicinity will remain with him a reasonable time at the rate of \$20.00 per day; this rate will not cover the expense but Mr. Stoddard says he wants the members to feel that this is just one more of the many benefits they are receiving. Those who have not been members in the past will be entitled to the benefit of Mr. Conway's assistance when they have paid the initiation fee of \$10.00 together with the dues for the first quarter.

To some members this service alone will be worth more than the dues will cost for several years.

Mr. Conway will supervise the Association's "Cost Service Department," so that members who care to correspond with the Department regarding any question on accounting may address their communications to the office of the Association, 1300 Schofield Bldg., Cleveland, Ohio, Care Cost Service Dept., and their letters will receive the personal attention of Mr. Conway.

RESEARCH IN BRICK ARCHITECTURE.

The Development of Architecture in the United States and the Need of Better Understanding in Use of Clay Products.

A GOOD DEFINITION of architecture is, that it denotes the art as distinguished from the science of constructive design. It may be regarded as the highest of the industrial arts, and the most useful of the fine arts, as its purpose is to produce pleasing effects to the eye and mind, while at the same time satisfying the requirements of convenience, stability, and meeting the material or structural demands required by local conditions.

Research or investigation in architecture in general application or understanding of the term is made conveniently available to everyone through various encyclopedia and printed works, and these are more particularly with noted structures and classic divisions and to architectural developments or achievements that are conspicuous in the building history of the world.

The thing of most interest to more people, and the thing which we really need more light on today is the development of architecture in the United States in the course of building homes for the people themselves. All sorts of homes from the modest cottage to the mansion, and including outbuildings and other structures of the home surroundings, as well as the human habitations. There are times when it seems that what we need is to lay aside entirely the familiar things and the usual teachings of architecture that the mind may be clear and open for a study of what has been done, what is being done, and what may be done architecturally in the development of homes and home surroundings for the human race in the United States. The thought in mind now is neither churches nor great new structures, but rather to get these which have been the great features in architectural development out of mind, and concentrate upon the more modest undertakings which are really the more intimate and important thing to man right now—the home and home surroundings.

As we all know, the pioneers in this country, not only those first settlers who stayed near the sea coast and followed along the waterways inland, but even later those who took trails back into the wilderness to begin settlements which led to our civilization today, simply built shelters, built them of the most readily available materials in the simplest and easiest way practical. First it was just a square pen built of logs. They were built square because the logs could be notched over each other at the corners and thus be made to stand up against the elements, wild beasts and the savage Indians. By and by as they had more time for deliberation and needed more room, the original square pens were enlarged upon by making them double length in some cases, and by making two square pens separated in other cases and inclosing one side of the dividing space. All at first were one story high, then came a building upward to what might be termed a story and a half. Many of the pioneer log structures were a story and a half high, with simply a ladder to climb into the upper attic-like story.

The general process of evolution in the home architecture of the country has been from the log cabin to the frame house built of lumber. Then to the more permanent material of stone, brick and concrete, with brick soon leading and now in position to play an overwhelmingly dominant part in the home architecture of the future.

In using the term brick here we should bear in mind that it is a general term intended to cover all such clay products as building brick, paving brick, hollow tile and terra cotta. There is promise, too, that products known as hollow building

tile will play an important part in developing the home architecture of the future.

To the student of progress of clay products in the building of homes and structures surrounding the home it seems strange that the producing industry itself has been slow to recognize the architectural possibilities in face work with hollow building tile. It has made its main development so far on its structural merits with its architectural possibilities practically unrecognized and seemingly not much thought of. Probably this was because the first extensive use of this product was in the building of steel frame skyscrapers where it was used as an inner wall member faced on the outside with brick and finished on the inside with plaster. Anyway, in developing its use in building homes and smaller buildings of this class a thought that persisted for quite a while was that it must either be faced on the outside with stucco or a course of face brick. In other words, it was not regarded as having face features or architectural possibilities of this kind. Now there is in evidence some awakening to face features and possibilities in hollow building tile which furnishes an interesting feature of future possibilities.

There has not yet been enough progress in developing face features of hollow building tile for one to venture a forecast as to the broad general feature for this work. There are some interesting experiments, however, which will serve in a measure to illustrate both architectural progress and changes in the material of construction used in home surroundings, especially on the farm, which is a big field for present development. The story was told in *The Clay-Worker* during the past year of some interesting development in the manufacture and use of a type of 4x8x12 hollow building tile in western Kentucky where it is coming to replace the old log structures and frame structures both in dwellings and in barns.

A pictorial showing of the old barn and the new, that is, the barn of yesterday and today and tomorrow in contrast, will serve also as an illustration of the process of evolution in hollow building tile in farm communities.

The old barn was of the original square pen type built of logs with extensions and additions made of lumber or lighter structural material, and was typical of both the structural materials and the ideas of architecture which entered into home building.

The modern barn, which has come to replace it, is of the same general structure outline but larger and more carefully built because it is built for permanence with materials that are everlasting.

Hollow building tile here as elsewhere has been used more extensively for barns and outbuildings where the idea of utility has outweighed the elements of beauty in the minds of the builders. Gradually, however, ideas of beauty are entering and meantime there is developing a realization of the architectural possibilities of hollow building tile walls showing their own face.

In the same community where barns, granaries and garages and homes were built of hollow tile, it is entering into school building work, and one splendid example shown is that of a school building costing \$20,000, the walls of which are of hollow tile making their own face.

This illustrates the fact that sometimes the clayworkers themselves are slow to realize the architectural possibilities of the materials they are producing.

We have had a number of interesting demonstrations of this, a number of cases in which architects with vision have taken over-burned and what is regarded as cull brick from the brick plant and have developed out of this architectural beauty, and this in turn has been responsible for quite an awakening to the face feature possibilities in different kinds of brick and clay products, and things of this kind have led to the

development of rough texture and special lines of face brick.

Thus we had during the past decade more or less a wonderful development in face brick features, and in the process of developing these and of standardizing and promoting the use of specified colors and types of face brick we have gotten a new angle on the whole matter of brick and architecture.

We find at times that it is practical to take what may be regarded as almost worthless material and get some novel and striking effects. Sometimes this is done with cull pavers, an example of which was also illustrated in *The Clay Worker* last summer, showing an entrance way to the Mayer estate, Bridgeville, Penn., made of pavers that had been rounded at the corners by putting through rattler tests. Indeed there are a number of interesting examples of striking architectural effects produced by using cull pavers.

In most of the older home building with brick in this country the architectural features in the main have been sought in design, in the outlines of the structure itself. Until recent years not much attention has been given to a study of the possibilities in variety and pleasing effect that may be had from different methods of laying up brick in the walls. In the older countries there has long since developed so-called bonds, that is, variations in the face appearance of brick walls by systematic attention to the matter of laying up and bonding the brick. Some of these developments have become familiar to us under various names, such as English bond, Flemish bond, garden wall bond, and so on.

While these have been recognized some in this country the main tendency until recently has been to get the face feature either in the color or texture of the brick used for face work then to lay it up regularly in what is known as stretcher form.

During the past few years we have been getting away from this and developing variety in which one noticeable feature is in the use of what is termed soldier course ornamentation. That is the standing of a row of brick on end to vary the monotony of the regular brick wall. This at the present time promises some interesting developments because those turning their attention to it are also moved to vary even the monotony of this and to seek for different combinations and results that can be obtained simply by varying the manner of laying up the brick and getting thereby a pleasing effect in the brick wall from its bonding lines themselves, especially when colored mortars are used to make the joint lines conspicuous. This promises to be one of the interesting features of development in the modest home building during the next few years.

THE TILE INDUSTRY IN CALIFORNIA.

When the mission fathers in the centuries gone by invented roofing tiles for the old adobe structures and mission buildings they, to use a slang phrase, "started something," a something, the magnitude of which, the fathers could not foresee. For the demand for the red and fancy colored tiles that lend such a distinctive touch to roofs, and brighten up many a dull stucco or adobe structure in these days, has increased in an almost unprecedented fashion in California. The demand for Spanish and Moorish architecture, which blends so appropriately with California landscapes, is also responsible, so builders assert, for the quantities of tiles in use. About 4,000,000 roofing tiles were manufactured in Los Angeles alone during 1921, and this year bids fair to outdo this record. Besides the roofing tiles, large quantities of hollow tiles for walls have been constructed.

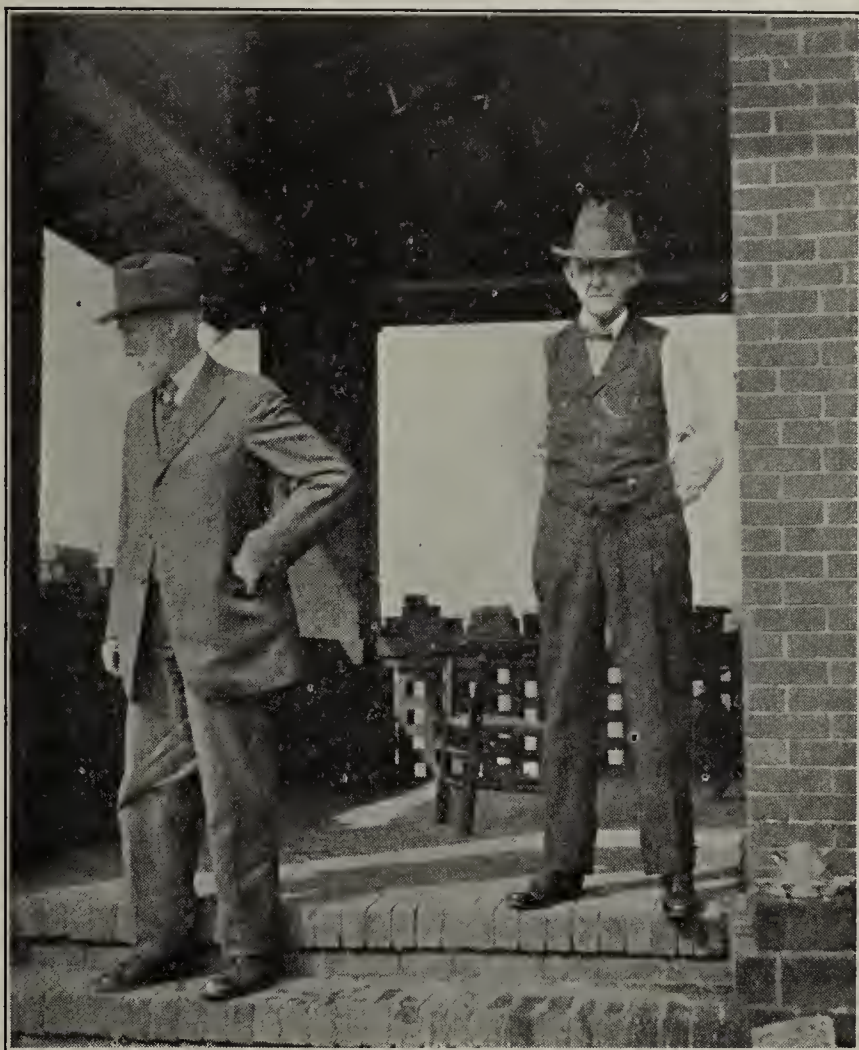
One of the odd facts is that our blue sky laws are intended to protect what we have saved for a rainy day.

A PIONEER BRICK AND TILE INDUSTRY.



ONE OF THE PIONEERS in the clay-working industry, who is still active in harness and gives personal supervision to one of his plants, is Henry Kleymeyer, Sr., of Henderson, Ky. He started the brick and drain tile business back in 1865 and is still at it after a continuous period of 57 years in the business, and has not only maintained steadily a brick and tile manufacturing business in Henderson, but is the father and grandfather of a great family of clayworkers who all together are interested in and control seven brick and tile plants in Kentucky and Indiana. The present effort is to give an illustrated story of their plants and operations at Henderson, Ky.

The Kleymeyer-Klutey Brick and Tile Works, which grew



H. Kleymeyer and F. C. Klutey, Henderson, Ky.

out of the original establishment of H. Kleymeyer, of Henderson in 1865, was incorporated in 1900, and the present officers and active management consist of Henry Kleymeyer, Sr., president; F. Klutey, vice president; F. C. Klutey, secretary and treasurer, and H. W. Klutey, superintendent.

The main brick plant, of which F. C. Klutey, secretary and treasurer of the company, is general manager, and his brother, H. W. Klutey, is superintendent, consists of a Potts soft mud machine with a daily capacity of 32,000, a dryer, and kilns so well balanced with the producing equipment that they can run steadily through the season to full capacity. It is their intention to produce five million brick this season.

The raw material is a surface clay from which they garner with scrapers and dump wagons, going as a rule from four to six feet deep and reclaiming the land after the surface

clay has been worked off. They have plenty of land and raw material around their plants to keep them going busily for the next hundred or two hundred years without worry on this point. The brick burns to a bluish red and has some fine architectural face brick possibilities which they have just now begun to realize the full merit of. They have a number of splendid buildings around Henderson which bear testimony to the architectural beauty of this red with its bluish tinge and its fine sand mold finish and they are now actively exploiting the idea of this face brick with colored mortar.

When the clay is garnered at the pit it is hauled by dump carts on a roadway graded up so that it goes directly into a mixing and preliminary pugging mill of their own construction, and from there on through the Potts soft mud machine, from which it is loaded on to dryer cars and goes into a waste heat drying system. To handle this waste heat and the forced draft system which is used on their kilns they have quite a series, or network of underground tunnels, and two systems of fans for forcing the air circulation. That at the drykiln which handles the waste heat system for drying is an American blower fan ten feet in diameter for driving the air in and through the tunnels, and a six-foot supplementary exhaust fan on the other end of the line to help out. For the forced draft system used on their kilns they have a motor-driven No. 5 Syrocco fan.



Sectional View of Kleymeyer-Klutey Brick and Tile Company's Plant.

The waste heat fan system is so equipped that they can handle the waste heat from the kilns when this is available, and when it is not they turn the exhaust steam through a coil system and get steam heat. Most of the time when running steadily they are able to get waste heat sufficient from kilns that are cooling down to operate their drying system.

There are five kilns at the main brick plant, including the new one that is being built or rebuilt. Three of these are updraft kilns and two of them are rectangular down-draft kilns. Two of the up-draft kilns have a capacity of 350,000, and one has a capacity of 300,000. The two down-draft kilns have a capacity of 125,000.

They use west Kentucky coal, mainly, of nut size, and the forced draft system operated through a network of tunnels, the main lead being a tunnel made of two-foot sewer pipe, is applied to both the down-draft and the up-draft kilns, though there is a difference in the details of the fire boxes and of the brick setting. Broadly speaking, however, in each case there is used instead of grate bars metal plates in the bottom of the fire box perforated with 5-16-inch holes through which the draft reaches the fire. This forced draft is found to be very helpful in lengthening the flame of the fire and in uniforming the fire and making it burn thorough all the way through.

The process of drying and burning calls for about three

days in the dry kiln and then six days for burning in the down-draft kilns and nine to ten days in the up-draft kilns. Taking the down-draft burning as an example, they water smoke for about a day and a half, carrying a temperature ranging from 600 up to 800, or probably 900 at the end of the period. Then the heat is gradually increased to a temperature of 1,800 degrees and the settling period continues through two or three days with the temperature reaching a maximum of about 1,860. This is pretty high temperature for brick burning and ranges at about 100 degrees above that of most of the west Kentucky and southern Indiana plants. The result is a very hard brick and a bluish tint in the well-burned ones that increases the beauty of the natural red color to which this clay burns. Brown recording pyrometers are used to determine and keep a record of the temperature.

There are several interesting features about the rectangular kilns at this plant aside from the forced draft and the down-draft characters. One of these is in abutment piers used for bracing the side walls, and on top of these come the sills for the framework of the sheds covering the kilns, which makes for greater stability and less deterioration through expansion and wall cracks. This feature is noticeable both at the main



Office Building of Kleymeyer-Klutey Brick and Tile Co., Henderson, Ky.

brick plant and at two rectangular kilns still standing at the tile plant on the other side of town.

This firm shows consistency by building the plant office with brick, and then flooring the porch and making the front steps of brick also. The writer was fortunate enough to get a snapshot picture of this front porch, showing the pioneer brick maker, H. Kleymeyer, coming out, and F. C. Klutey, the active manager and president of the Kentucky Clay Products Association, with his coat off ready to go to work.

In addition to the main plant outlined here the company also operates a tile plant at the opposite edge of Henderson, to which Mr. Henry Kleymeyer still gives his personal supervision. This in the main is a typical three-kiln tile plant, that is, with three of the regulation round down-draft kilns. There is also in the background two big rectangular kilns that have been used for years both for tile and for brick and which can be put into commission again if needed. In addition to making drain tile at this plant they have also been turning out a little hollow building tile with satisfactory results, and if the trade outlook for same continues promising they will probably develop this as a more active feature of their tile plant.

The tile-making equipment consists of a Freese Tile

machine with a capacity of 12,000 four-inch tile a day and a Dennison automatic cutter made by the J. D. Fate Co., Plymouth, Ohio, which Mr. Kleymeyer regards as the best tile cutting machine that has so far been invented.

Written for THE CLAY-WORKER.

THE CHICAGO SITUATION.



CHICAGO can win its present desperate battle to free itself from the domination of labor thugs and crooks, it is safe to predict that in the next eighteen months all previous building records in this field will be eclipsed. Aside from the labor situation, basic conditions are right for an unparalleled activity, and even now the number of building permits taken out at the city hall office of the commissioner of buildings for any one week runs from two to over three times the number taken out during a corresponding period of 1921.

The city has been away underbuilt for its population since the end of 1918, when the boys began coming back from the trenches and the training camps. In addition to this a certain considerable proportion of the apartment house landlords



Fire Doors Are Suspended from Overhead in These Kilns.

are still trying to screw rents up still a little higher. This is tending to drive thousands of individuals into building their own homes, even though the cost of construction still is at levels much above the pre-war period. Also the situation is inducing into the field investors who believe they can build at present costs and get a fair return even at rentals which, for these days, may be considered fair and reasonable if not actually generous.

There is no denying, however, that the labor situation is even uglier than ever. Employers who persist in operating under the Landis award terms and defying the orders of labor union officials, some of whom are ex-convicts, are constantly menaced by violence and not a few have had their plants bombed while workingmen who insist upon their privileges as American citizens to earn a livelihood at a fair wage, regardless of labor bosses, are beaten up and slugged with a frequency that is revolting to men with any sense of justice or independence. Public opinion is gradually awakening in support of the chief of police, State's attorney and some of the more militant judges who are valiantly co-operating with the Citizens' Committee to enforce the Landis award. The murder of policemen by alleged labor thugs has kindled the

spark of resentment into a flame and it is believed that the present run of anarchy is heading toward a revulsion of popular sentiment such as snuffed out the anarchistic movement which was snuffed out nearly thirty years ago after culminating in the riotous murders of Haymarket square.

The co-operative apartment idea is going strong in the wealthier sections of the community as well as in the older apartment house neighborhoods, and soon the "own your home" slogan will not convey alone the vision of a row of nearly-the-same-model cottages with a postage stamp of green lawn in front of each. Evanston now steps to the front boasting soon to have one of the largest and finest co-operative apartment dwellings in the middle west. It will be a seven-story structure and stand at the northeast corner of Hinman avenue and Grove street, overlooking the park. It will cost about \$700,000, and will be the property of twenty-eight owners. The apartments will vary in size from six to ten rooms and will cost their owners from \$20,000 to \$30,000. Holabird and Roche, the architects, are now completing plans for final interior details until the new owners can have a choice about variations which can readily be made to suit individual tastes.

Another luxurious apartment on the north side will be a forty-five apartment building of brick and stone at 440-50 Surf street, just east of Pine Grove avenue. It will cost \$325,000.

Still more pretentious will be the \$1,000,000 Hotel Pine



Up-draft Kilns on Plant of Kleymeyer & Klutey B. & T. Co.

Grove in Pine Grove avenue between Diversey and Surf streets. It will contain 140 unfurnished apartments, of two, three and four rooms each, a large playroom for children and an enclosed garden on the roof with restaurant service. Brick and terra cotta will make the exterior attractive.

The Illinois Brick Company, here in Chicago, is running full eight of their yards. Some yards are running today that haven't run in a couple of years. Your correspondent was out on one yard the other day, and they were shipping twenty-four cars of brick in one day. Every bricklayer in town is receiving a bonus, and it is impossible to hire one. Some of them are getting as high as \$1.50 an hour. The citizens of the town are roused up, and I think the end is in sight for the grafting officials of the misled labor unions.

SCRIP.

MOVES TO NEW QUARTERS.

May first is commonly known as moving day, but the American Face Brick Association, which has established a reputation of being a little ahead of the times, moved April 22 from the location it had occupied for a number of years at 110 South Dearborn street, Chicago, to the Peoples Life Building, 130 North Wells street, Chicago, where their new telephone numbers are Franklin 4368 and 4369.

Written for the Clay-Worker.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE BRICK AND CLAY INDUSTRY.



STATEMENT OF MUCH interest to the paving brick manufacturers has just been issued by the Bureau of Public Roads, Department of Agriculture, showing the number of miles of brick-paved roads completed in the year 1921, the states in which these roads are located and the cost of the paving per mile and per square yard. Following are the official figures.

	Miles	Average cost per mile
Delaware	6.2	\$108,250
Georgia	0.4	33,950
Illinois	3.6	37,500
Iowa	21.2	63,000
Kansas	29.2	49,125
Missouri	1.7	38,250
Nebraska	7.5	41,100
Ohio	125.1	42,700
Oklahoma	.4	22,100
Pennsylvania	18.2	43,700
South Carolina	.2	24,500
West Virginia	10.3	39,350

It will be noted that the total number of miles of brick highway made in 1921 was 224, and that the average cost per mile was \$46,875. In the state of Delaware the cost rose to over \$108,000 per mile. The bureau further estimates that the average cost of brick road paving is \$4.10 per square yard, this figure not including the cost of grading, etc.

The Bureau of Public Roads is to have supervision of the distribution of over 200 carloads of paving and building brick, which has been transferred as surplus war materials by the War Department to the Bureau. About 100 carloads of the brick are suitable for highway paving, while the balance are red building brick. The brick are located at three points—Schenectady, N. Y.; Watertown, Mass., and Dover, N. J.—from which places it will be distributed. The Bureau of Public Roads has not announced the localities in which the brick will be used.

The U. S. Bureau of Standards, Department of Commerce, has just completed extensive experiments to determine the absorption of hollow tile. As the Bureau states, the porosity of clay products has an important bearing on their strength and fire-resisting properties as well as upon their ability to withstand repetitions of freezing and thawing. The percentage of water absorbed under given conditions can be taken as an index of the porosity of clay bodies burnt below vitrification. Until recently building ordinances generally prescribed immersion in cold water for 2 or 3 days as the method for determining porosity, but lately there has been a general change to the 5-hour boiling method, often without a change in the specified absorption limits.

An investigation has been conducted by the Bureau to determine the difference in results obtained with various methods and their effectiveness in determining the total porosity. Specimens of the different types of clay were successively immersed in water for periods up to 9 days and in boiling water for periods up to 5 hours with determination of rates of absorption. Similar determinations were made under vacuum and finally the total porosity was obtained by volume and specific gravity measurements.

The results, while varying considerably between different types of clay, are in general: (1) Absorption determined by cold water immersion does not approach near enough to complete saturation to give practical and consistent results; (2)

the best practical method consists in boiling for 5 hours, cooling the water and specimens to room temperature, and allowing them to soak for 1 hour. When about 88 per cent saturation is reached, the absorption thus determined is on the average 1.28 times that determined by immersion in cold water for 72 hours. (3) Proper treatment under vacuum will give nearly the full saturation and porosity, but the method is probably too complicated for use in acceptance tests.

The Washington bureau of "The Clay-Worker" has secured from the Department of Commerce the selling prices of common brick on April 1 in 56 cities throughout the country. These are as follows, per thousand: Boston, \$16; Fitchburg, \$21; Haverhill, \$20; Fall River, \$18.50; New London, \$17.12; Albany, \$13.30; Rochester, \$16.25; Niagara Falls, \$17.50; Buffalo, \$17.12; Poughkeepsie, \$18; Newark, \$16.75; Reading, \$16.50; Baltimore, \$17; Fairmont, W. Va., \$21; Columbia, S. C., \$10.50; Savannah, \$13; Tampa, \$13.65; New Orleans, \$11; Little Rock, \$12.50; Nashville, \$24; Benton Harbor, \$14.50; Duluth, \$14.50; Sioux Falls, \$17.60; Grand Forks, \$15; Pittsburgh, \$16; Erie, \$15.75; Cleveland, \$16; Akron, \$12.75; Lorain, \$16; Youngstown, \$18.50; Warren, \$15.90; Dayton, \$16.50; Cincinnati, \$18; Toledo, \$12; Kansas City, Mo., \$16; Shreveport, \$16; San Antonio, \$16; Tucson, \$10; San Jose, \$16.50; Pasadena, \$17.50; San Francisco, \$15.50; Portland, Ore., \$18; Spokane, \$15; Detroit, \$16.50; Pontiac, \$14.40; Bay City, \$14; Saginaw, \$12; Flint, \$14; Lansing, \$12; Jackson, \$14.50; Milwaukee, \$12.50; Chicago, \$11; Cedar Rapids, \$14.30; Waterloo, \$14.90; Council Bluffs, \$14.50; Des Moines, \$17.

The National Paving Brick Manufacturers' Association has scored a decisive victory in its fight before the Interstate Commerce Commission to secure a uniform schedule of railroad freight rates for all classes of brick. The commission has just handed down a decision which requires all railroads east of the Rocky Mountains to maintain a uniform schedule of freight rates on practically all classes of brick, thus sustaining the contention of the National Paving Brick Manufacturers' Association. The commission, in its decision, held that the railroads might cut rates on freight for common brick, which is loaded without protection against chipping or breaking, 20 per cent.

Exports of brick and tile are fast reaching normal figures, according to a statement of the Department of Commerce. Following are the figures for the first three months of the year:

	January	February	March
Fire-clay bricks	\$90,234	\$89,732	\$94,025
Silica bricks	7,525	5,518	3,645
Other refractory bricks ...	13,951	7,987	3,696
Refractory shapes	7,827	7,273	9,859
Building bricks	2,576	3,550	7,547
Hollow building tile	258	2,033	710
Wall and floor tiles	37,908	18,462	20,163

Henry E. Stringer, general manager of the Hydraulic Pressed Brick Co., in Washington, and one of the best-known men in the brickmaking industry here, has been elected president of the City Club, the big civic organization of the national capital. The club has a membership reaching close to 2,000, and has just completed a magnificent club house on G street.

The brickmaking industry in this vicinity is enjoying a condition it has not known since the pre-war years, according to the building inspectors' department of the District of Columbia government, and this is the inability to produce an adequate supply of brick to meet current building requirements. This condition is said to be retarding building operations to an extent in the District. It is the belief that this condition is due to the fact that Washington is now enjoying an unusually active spring building boom. It is the

opinion of the District government that more brick plants in nearby territory would find a ready market here for their product. There are now being issued as high as seventy building permits a day, which is more than double the daily average for years past.

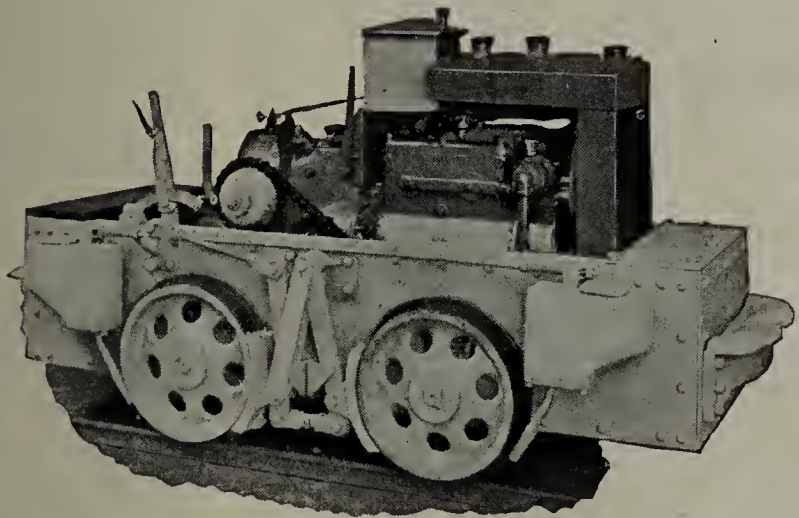
ALTHOMAR.

ATLAS TYPE "G" GASOLINE LOCOMOTIVE.

THE Type "G" Locomotive of the Atlas Car and Manufacturing Co., Cleveland, Ohio, was developed to meet the demand for a compact, dependable gasoline locomotive for light haulage service at an attractive price. It is a substantial machine, complete in every detail, and is built to stand severe service. It is, primarily, a standardized product, for such a value is only possible as result of production methods of manufacture.

The motor is of the rugged tractor type with all parts thoroughly enclosed and protected, but still easily accessible. The in-take air is washed by passing through a water clarifier which removes the dust. A simple and effective splash system of lubrication is used. The lubricating oil is introduced at one point in a central reservoir which lubricates all parts of the motor and transmission.

The clutch is placed just behind the flywheel in the usual manner and the propeller shaft mounts, at its extremity, a



Atlas Gasoline Locomotive.

bevel pinion which is in constant mesh with two bevel gears, causing the bevel gears to rotate in opposite directions. Forward or reverse motion is obtained by engaging either one of these bevel gears by means of a sliding gear clutch. A neutral position is also provided. The drive from the bevel gear shaft is by a spur gear reduction to the jack shaft on the extremities of which are mounted sprockets which drive the axles through high-grade roller chains.

The power plant is mounted in a standard locomotive frame such as they have used for years for their electric locomotives in mining and industrial service. Complete locomotive equipment is provided such as hand operated brakes with renewable brake shoes, hand operated sanders of rugged design, structural steel frame and locomotive type bumpers.

Speed changes are obtained by throttle control, similar in operation to steam locomotive. All control levers are conveniently grouped in the operator's compartment.

Cast iron wheels are standard equipment but steel wheels or steel tired wheels as well as a cab for enclosing the operator and mechanism can be provided at a slight additional cost.

There is plenty of capital in the country for whatever development may be needed, more capital in fact than ever before, but what capital wants is a good show for returns, and it is inclined to be a bit timid where labor problems are involved.

BUSINESS IMPROVING FOR DETROIT FIRM.

Andrew Baird of the Baird Machinery & Manufacturing Co., Detroit, reports in an interview that business improvement is well under way. Says their own increased business has caused an increase in their working force and their plans include a definite expansion program—timely release of details of which will later appear in our columns.

BIRMINGHAM COMPANY ESTABLISHES SALES AGENCIES IN THE EAST.

John W. Sibley, general sales manager of the Birmingham, Ala., Clay Products Company, and treasurer of the N. B. M. A., has just returned from a trip through the east. Mr. Sibley established sales agencies at New York, Washington and Norfolk.

He reports he "found conditions wonderfully improved in the east since his former trip to that section last winter. Building activities are almost at a stage of high pressure and the demand for building materials is very heavy. At practically all the points visited deliveries were almost sixty days behind orders."

WELL KNOWN POTTER DEAD.

Edward Menge, former president of the National Brotherhood of Operative Potters, died at his home in East Liverpool May 4. He was nationally known in the pottery and clay-working industry.

Born in Wheeling, W. Va., August 29, 1871, Mr. Menges trained as a pottery worker at the bench until 1902, when he was selected national secretary of the brotherhood at the convention held in Wheeling. He remained in office as secretary for nine years.

During the administration Mr. Menges saw the brotherhood achieve its present strong position in national labor organizations, playing a leading part in all wage negotiations and other discussions between the craftsmen and pottery manufacturers.

He is survived by his widow and two sons.

During the funeral, potteries in the district suspended operations.

THE DELVERS IN CERAMICS.

Not only are those boys who are active in study and research works in the ceramics doing a splendid thing for the moment, but they are also rendering a service from which the coming generations will profit. And it should cheer and encourage them to know that the progress of ceramic studies and knowledge in this country furnishes a bright spot in the world of progress.

Some years ago when the secretary of the Swedish clay-working industries was visiting this country the suggestive question was put to him that while in the old countries they were probably ahead of us in ceramics we were evidently leading them in the mechanics of clayworking. In reply he said that he had been pleasantly surprised that not only have we made greater mechanical progress than the other countries, but that we were also leading the old countries in ceramics and in the study and progress in the science of clay-working.

If we made that kind of an impression on an old country student in prewar days, what would an unprejudiced visitor from the older countries think today? There has been distinct progress made since those prewar days and there has also been such a noticeable increase in the number and the enthusiasm in the work that still bigger things are assured for the future.

THE HOME COMPLETE EXPOSITION.

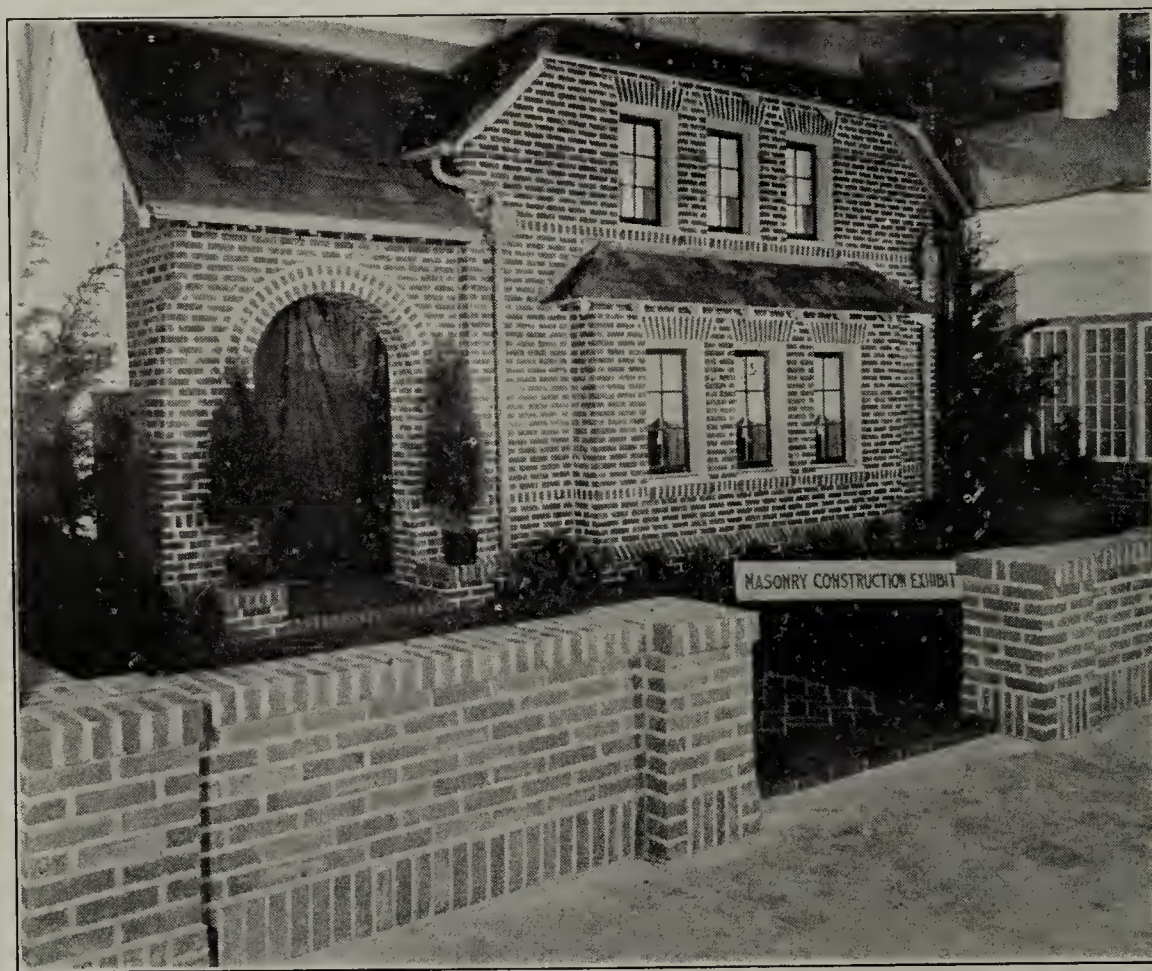
NEARLY EVERY CITY of any consequence in the United States has held of late an exposition backed generally by the realtors, contractors, material supply dealers, manufacturers of structural products, and household furnishers. In nearly every instance the result has been very gratifying from point of interest shown and the resulting business.

Of all these expositions held during 1922 those in a position to know, declare that the recent Home Complete Show at Indianapolis, May 8th to 13th, was the best from point of display and business building. The Home Complete Show drew immense throngs of interested visitors who came to get first hand information regarding various angles of the home complete, new ideas in household furnishings and arrangement, the home itself, and to hear the lectures and talks delivered on nearly every phase of the present day home problems.

The Manufacturers' Building at the State Fair Grounds,

Face Brick Association, the local Bricklayers' Union and the local Hod Carriers' Union. It consisted of a completely erected front of a brick home showing the artistic possibilities as well as the durability of brick and tile and masonry construction. It was designed by local architects, the Mason Contractors' Association furnished the space, the Bricklayers' Union as well as the Hod Carriers' Union supplied the brick masons and hod carriers, the American Face Brick Association through the Hydraulic Press Brick Co. and the Western Brick Co., the brick, the Ludowici Celadon Co., through Ralph Reeder, donated the roofing tile, while the sand, gravel, structural iron, mill work, painting, shades and drapes, lawn furniture, and landscape work were donated by local concerns. The brick in the house were the Hy Tex Saravanned Chin-chilla while the brick wall surrounding the exhibit showed off to advantage the brick of the Western Brick Co.

Tuesday, May 9th, was designated as "Brick Day," featuring brick as a building material of recognized merit. The official film of the American Face Brick Association, made



Unique Brick Display at Home Complete Exposition.

Indianapolis, was an ideal place to hold the Home Complete Exposition for it provided wide aisles and a sunken center wherein centrally located was erected a five-room "home complete" which was given away in a contest for the best reasons offered for owning a home in Indianapolis.

The scores of displays were so tastefully and attractively arranged, including so wide a diversity of interests that the beauty of the decorations, the general aspect and unique and novel methods employed in setting off the exhibits combined to make it most successful from every viewpoint.

Of particular interest to the visitors were the exhibits of clay products and in this connection the masonry construction people did themselves proud. While there were many beautiful and attractive displays, this one outstripped all the others and of course naturally it had to be constructed of well burnt clay products. This was the result of the co-ordination of the interests of the Brick Contractors' Association, the American

under the personal direction of Dr. G. C. Mars, Director of Publicity, was obtained for the occasion. The film was in three reels, the first took one back to the origin of the brick as shown in views gathered along the Euphrates and Nile Valleys, then through ancient Roman brick work to the architectural treasures and masterpieces of Europe and England. The second film showed the manufacture of brick by the old soft-mud or hand-made process as used by our forefathers in this country. The third reel took one through the most modern of brick plants today, employing the commercially termed dry-press and stiff-mud processes, with views of scientifically constructed kilns being set with unburned brick, kilns in process of burning and the burned brick being assorted from kilns, followed with views of some of the most artistic examples of recent face brick work in our midst. Eleven of these educational films are in circulation among the leading colleges and universities, having architectural and engineer-

ing courses. The showing of this film offered those attending the exposition a trip through a modern face brick plant without the usual heat and inconvenience encountered in factories of this class.

Dr. G. C. Mars, Director of Publicity of the American Face Brick Association, spoke in the Lecture Hall of the exposition at 3:30 afternoon and 8:15 evening on the subject of "Brick Construction—Its Durability, Artistic Possibilities, Comparative Costs and Economy."

Separate exhibits were made by local brick and building supply dealers and added much to the publicity given to brick as a building material.

RECENT PATENTS

IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,414,444. Clay Building Tile. Halver R. Straight, Adel, Iowa, patentee.

An improved hollow tile building block formed with grooves in the face of each end, those at one end being arranged in angles divergent from the plane of the face of the block, and those at the other end being arranged at angles divergent from those on the first mentioned end, for the purposes stated.

No. 1,414,998. Brick-hacking Machine. William H. Allen, Momence, Ill., patentee.

In a hacking device for bricks and the like, the combination of means for feeding a plurality of bricks in succession, a turntable, a transfer car carried thereby adjacent the delivery end of said brick feeding means, and means for moving said turntable parallel to the direction of movement of the bricks in said brick feeding means.

No. 1,413,241. Clay Building Tile. Avila O. Thomas, Detroit, Mich., patentee.

In a wall construction, superimposed rows of blocks and tie members diagonally connecting the blocks of each row, said tie members having heads and tensioning means, and said blocks having pockets respectively adjacent their upper and lower edges to receive the heads and tensioning means of said tie members, the pockets adjacent adjoining edges of superimposed blocks being in communication.

No. 1,414,246. Hollow Building Tile. John W. Ager, Birmingham, Ala., patentee.

A hollow building tile substantially rectangular, having in a rear corner portion thereof transverse and lengthwise intersecting partitions defining with the adjacent ends of the rear and side walls of the tile a substantially rectangular cell, there being weakened fracture lines in the two outer walls of said cell remote from the corner of the tile and so disposed and arranged that by breaking off said rear corner of the tile a jamb clock is formed.

No. 1,412,926. Brick Building Construction. Charles F. Dardano, San Salvador, Salvador, patentee.

A building construction comprising blocks laid horizontally in courses, blocks of certain courses having tongues extending from one end, recesses to receive the tongues provided in the other ends thereof, the blocks of alternate courses being composed of body portions with right angular projections formed centrally thereof, and providing shoulders at opposite sides of the projections, said last mentioned blocks being laid in opposite directions successively whereby to engage adjacent

shoulders, said last mentioned blocks also having slots therein in alignment with the slots in the first mentioned blocks, and reinforcing rods passing vertically up through the slots in said blocks, substantially as described.

No. 1,414,061. Brick Pallet. Clarence H. Young, Boston, Mass., patentee.

A pallet comprising a sheet metal body having lateral flanges, said flanges reinforced by reversely bent edge portions, a reinforcing piece secured to an end of said body and providing a sheet metal cross-reinforcement transverse to the general plane of said body and having its ends entered between said lateral flanges and said reversely bent edge portions, said cross-reinforcement unitary with an end reinforcement providing portions underlying and overlying the end of said body.

No. 1,407,192. Continuous Kiln. Walter G. DeSteigner, San Diego, Cal., patentee.

The combination in a continuous kiln having a substantially horizontal middle portion and downwardly directed end portions, of means for moving a series of mechanically unconnected and separated articles to be treated by intermittent successive steps up one end portion across the middle portion and down the other end portion and means for independently supporting said separated articles during the interval between stepped movements.

No. 1,406,354. Open End Hollow Tile. Mathias Dochnal, St. Louis, Mo., patentee.

A building tile of the class described comprising an inner wall section and an outer wall section, a pair of spaced cross-walls uniting the inner and outer wall sections, each of said cross-walls having concaved faces to form a circular central opening in the tile and a semi-circular opening at each end of the tile, a pair of opposed ribs extending into the central opening from the inner and outer wall sections, said ribs each having a beveled inner face uniting with the concaved faces of the cross-walls to strengthen the inner and outer wall sections midway their length, facial ribs arranged in opposed relation at the extremities of the inner and outer wall sections and each of said ribs having a beveled face terminating with the ends of the concaved faces of the cross-walls.

No. 1,413,402. Apparatus for Hacking Bricks. William L. Hanley, Jr., Bradford, Pa., patentee.

In apparatus for hacking bricks, a hacking frame comprising side frames, a front end bar provided with depending partition supports and intermediate hangers, a rear end bar forming a stop for the entering rows of bricks, partition bars rigidly secured to said end bars, oscillating clamping bars pivotally mounted in said hangers and the rear end bar, pinions connected with said clamping bars, a rack bar engaging said pinions, an operating lever for shifting said rack endwise, and locking means for holding said clamping bars in operative position.

Trade-marks and Designs Patented.

No. 152,351. Birmingham Slag Co., Birmingham, Ala. Trade-mark registered for brick tile.

No. 147,629. W. E. Mushet, San Francisco, Cal. Trade-mark registered for fire brick, furnace tile and baffle tile.

No. 155,236. John R. Root, Terre Haute, Ind. Trade-mark registered for name "Brikote" for road-paving brick.

No. 153,095. The Aluminum Flake Co., Akron, Ohio. Trade-mark registered for a finely pulverized clay product.

No. 152,396. The Evans Builders Co., Uhrichsville, Ohio. Trade-mark registered for certain clay building products.

No. 151,472. Charles H. Puls, New York, N. Y. Trade-mark registered for name "Oilite" for fire brick, furnace-lining brick, etc.

No. 153,614. Pottstown Fire Brick Co., Pottstown, Pa. Trade-mark registered for name "Thoro-Fuse" for a preparation of clay for making fire brick, stove linings, etc.

Written for THE CLAY-WORKER.

DETROIT BRICK AND BUILDING NEWS.



DETROIT, which held an enviable position near the top of the list in construction for a number of years, is again taking a lead in the resumption of the industry. Detroit held third place in the national column of total cost of construction for a number of years, being surpassed only by New York City and Chicago. For one year, Los Angeles slipped into third place and Detroit was fourth, but the construction program of Los Angeles that year was somewhat unusual, while Detroit's progress has been steady year after year.

There is another angle to this situation which is having its effect here. During the war period and when many of the large manufacturing concerns were figuring on ways and means of cutting down their income and excess profits taxes, they built extensions sufficient to take care of their needs for at least five years. As a result, large industrial construction is now almost entirely absent from Detroit's monthly building reports, the totals being made up largely of mercantile, apartment and residence work, with a large number of garages, many churches, theaters and schools.

The point is that when business gets into its swing and the local plants reach the capacity of their structures, they will be compelled to enter upon another extensive building program which will make the building totals look like they used to look in previous years.

April building permits showed an increase of 271 and \$682,636 in estimated cost in Detroit.

In the classification, brick and tile construction covered 125 projects valued at \$1,769,830, the largest item in the list, while brick veneer, totaled 206 jobs valued at \$1,417,450 and reinforced concrete, three jobs valued at \$755,000. There were 31 cement block jobs but they only totalled \$19,520 in cost, while 1,346 frame structures totalled \$1,586,746.

Housing accommodations showed the greatest increase and the April projects will provide for 1,274 families, as compared with 581 for April, 1921, and 1,086 during March, this year.

Frank Burton, commissioner of building, says that his department is having considerable trouble in preventing the construction of wood partitions and wood mezzanine floors in fire proof buildings and he claims that such construction is a fire hazard.

"It is the duty of the architects," he says, "not only to protect, as far as possible, the buildings and the property interests of their clients, but also to so construct fire proof buildings so that nothing can occur which will bring this type of construction into disrepute, or create in the minds of laymen any lack of confidence in fire proof buildings."

The Mercier-Bryan-Larkins Brick Co. developed a mystery which the coroner has filed away as one of the unsolved mysteries of his department. In one of their kilns they found what looked like human bones, an empty bottle and some metallic remnants which were supposed to belong to a watch. It was believed that some man, full of "hootch," crawled into the kiln and when the oil burners were lighted he was consumed. On the other hand there was some who believed that he might have been murdered and then his body placed in the kiln, as it is pointed out that if he was alive he would have undoubtedly made his presence known when the heat became unbearable and been rescued. However, it is still unsolved and Charles H. Bryan would like to know how it happened. No clue has been obtained as to the man's identity.

Local brick men are busy and the trade is gaining on them every day. May 5 the brick makers struck for more pay and after a conference with the manufacturers, an increase of approximately 50 cents per 1,000 was granted, with the men to return to work May 8.

The plasterers threatened to strike about the same time last week and asked that their wages be increased from \$1 per hour to \$1.12½ per hour, but compromised with the Contracting Plasterers Association on \$9 for 8 hours. The lathers are also after more money and the shop men in the plastering industry are also asking for an increase, with the employers stating that it will be denied.

Through the efforts of various contractors' associations, large life insurance companies have decided to loan some of their money in this city for the purpose of constructing homes and it is believed that this will stimulate that kind of construction.

Edwin L. Downs, president of the Builders & Traders Exchange and connected with the U. S. Radiator Corporation, has issued a statement in which he says that now is the time to build in Detroit, as labor and materials are lower than they are likely to be when business gets brisk. He claims that the builder will now save about 25 per cent as compared with previous costs if he gets started before the prices advance, which he seems to think will be shortly.

The face brick men are having a hard time with deliveries and local dealers have been advised that about July 1 is the best they can expect on deliveries under the present circumstances, with the time apt to be extended.

Local architects assert that they have many thousands of dollars worth of new work on their boards and that most of it will go ahead.

It covers almost everything but large reinforced concrete construction, with large apartments predominating. They are usually of brick or brick and steel frame with hollow tile, fire proof, and run from 25 to 250 families. They are being planned for all parts of the city and the larger ones are being erected through bond issues.

The Builders & Traders Exchange, which occupies the entire fourth floor of the Penobscot building, is showing the effects of business resumption.

Applications for membership and requests for office space are coming in steadily and they indicate that many of the concerns which withdrew their Detroit offices in the past two years are again opening up.

One of the new concerns which has started business in Detroit is the Interior Tile Co., which has taken an office at the Exchange.

The common brick manufactures of Detroit are beginning to hit on "six."

It is a feast or a famine most of the time with the brick men. They get stocked up, and then the run starts, when they often have to borrow from each other, and as the best of feeling prevails among the local group, they get along nicely despite the competition.

Clippert is a good name to conjure with in the brick game in Detroit; in fact, it has been associated with brick so long that it has become almost synonymous.

George H. and Charles F., the elder Clipperts, if we may be permitted to hint at age, are at the head of the company, but Harry F. and "Conny," sons of George and Charles respectively, are now in active harness and undoubtedly in a short time a younger generation of Clipperts will continue to put the Clippert product into Detroit's structures.

While speaking of Clippert, it must not be forgotten that William Clippert is also a member of the family and he is also a brick manufacturer. He cuts a large figure in the local brick market.

While George does not mix in politics, Charles does, and he is president of the fire board of the city now. He is also active in the local Republican party and is one of the strong pillars of that political group who have been doing things in Detroit since the Democrats were turned out in 1913, when Oscar B. Marx, a close friend of Charlie's, brought the Republicans into the majority, to be followed later by the present Mayor, James Couzens.

Strange as it may seem, John S. Haggerty was also on that

side of the fence when the crash came, as he has been a lifelong Republican, as was John A. Mercier, but Charles H. Bryan, the "stormy petrel" of local politics, who talks as he thinks, and lets the chips fall where they may, was and still is a Democrat.

In fact, with William Jennings Bryan, he says that he believes he is about the only Democrat left, and sometimes he has his doubts about "Wm. J."

William Clippert is a bachelor, and that he has been able to escape Cupid's meshes this long, is a tribute to his agility. He would make a mighty good "catch" and many a Detroit matron knows it. So do some of the girls, it is hinted.

His diversion in summer is his yacht, the "Kathleen" and she is "some" yacht. It was built in the old days before Volstead let his foot slip, and it was common gossip that William arranged two lines of ice boxes and then built the boat around the boxes. Anyway, there was always an abundance of ice.

He has a fine two-story boat house, near the river. He calls it a "boat" house, but it is more like a palace, and he is never happier than when surrounded by a group of friends either at the boat house, at a "beefsteak dinner" or out on the yacht on the way to the Flats.

When they bring in the three-inch steak from the top of the salamander, over which he usually does the broiling, and spread it out before the guests, it is only natural that they feel like giving themselves up to God!

While the older Clipperts are thus going along life's highway, Harry and "Conny" are not idle. Both saw some lively service during the late war and made good records. When they returned, apparently not having seen enough war, both got married. They are now actively engaged in the business of the company, are popular with the contractors and mix it up with the bowlers and the guys who think that they can throw a wicked card in a penny ante game.

The local brick men lost one of the most likable of the group some time ago when Jacob Daniel died. He was a member of the Builders & Traders bowling league and was well liked, enjoying a game with all of the enthusiasm of the younger men. The business is now being conducted by his son, Herman, who is also an active bowler and a live mixer in the brick game of Detroit. WOLVERINE.

MINES PRODUCE BULK OF RAILROAD TONNAGE.

THAT THE RAILROADS of the United States receive from mining nearly six times as much freight as from agriculture, nearly four times as much as from manufacturers, and between six and seven times as much as from the products of forests, is developed as a result of a study of the classification of railroad freight tonnage recently made by W. W. Adams, mine statistician of the Bureau of Mines. The figures show that mining products constitute about 56 per cent of the total tonnage from all sources. The tabulation was confined to railroads having an annual revenue of at least one million dollars, and only freight originating on the roads was included.

In a recent year, the freight tonnages from various sources were as follows:

	Tons	Per cent of total
Products of agriculture	115,033,319	10.49
Animals and products.....	35,493,662	3.24
Products of mines	589,950,958	53.82
Products of forests	94,075,639	8.58
Manufacturers	168,759,153	15.40
Miscellaneous	92,798,540	8.47
TOTAL	1,096,111,271	100.00

A large tonnage derived from mineral products is included in the figures shown under the heading of "Manufacturers."

Written for THE CLAY-WORKER.

OHIO BRICK AND BUILDING NEWS.



NLESS the coal strike is settled before the middle of May or not later than June 1, the price of brick will go up," said Paul B. Belden, secretary and general manager of the Belden Brick Company, operating several building brick plants in the Canton, Ohio, district, recently, to your Clay-Worker scribe. He is optimistic in viewing the future for the industry and says that business is bound to continue good the remainder of spring and early summer. Building activities everywhere warrant this statement, he said. An advance of \$1.50 a thousand in the price of common brick, is announced by Mr. Belden. Owing to the coal strike, approximately twenty-five per cent of the company's plants have been compelled to suspend operations, due to lack of fuel, Mr. Belden said.

The Somerset, Ohio, plant of the Belden Brick Company is being completely rebuilt. A new waste heat system is being installed and size of the driers are being doubled. When completed, this plant will be one of the most modern in the district.

Building activities in the Canton district are on the increase, especially dwellings, and indications are that the season will be an excellent one. Brick companies are out after the business and competition is keen, officials of the larger companies say. Money is easing and home builders are being given more encouragement.

The sewer pipe and fire brick business of New Philadelphia district remains quiet with orders not as brisk as anticipated. Several fire brick companies in the north part of Tuscarawas county are operating only four days a week. The building block industry is more active because of the increased residential and business block construction.

Sewer and fire brick plants report ample stocks of coal in reserve, enough to run indefinitely at the present gait of production. One sewer pipe works has been stacking coal since January 1, in anticipation of the coal strike, it is said, and has sufficient to last for three or four months.

The brick industry continues more briskly. In the Uhrichsville district, four plants are receiving shipments of coal from Pennsylvania and West Virginia mines, their reserve stocks having been depleted.

Employees at two clay products plants, of George J. Markley, at Mineral City, have been granted an increase of five cents an hour in wages, due to the heavy demand for their products. Two sewer pipe plants in the Uhrichsville district, have changed from a nine to a ten hour basis of operation.

Fire of undetermined origin, late Sunday, May 9, destroyed the pattern shop of the American Sewer Pipe Co., at Akron, causing an estimated damage of between \$150,000 and \$250,000. The building, which was practically destroyed, was one of the industrial landmarks of Akron, having been the first plant of the former Hill Sewer Pipe Co. In spite of a high wind, the fire department prevented the flames from spreading across a wooden bridge to a pattern store house, where more than \$50,000 in patterns were stored.

Records of the blue prints of machinery for the 35 plants operating the sewer pipe company were saved by firemen and officials of the company. A. BUCKEYE.

We Echo the Wish.

Editor The Clay-Worker:

Enclosed please find our check for \$2.00 in payment of The Clay-Worker for 1922. Please acknowledge receipt and oblige.

I am still staying with you although I am seventy-seven years old, and when I shuffle off, I shall expect to meet you on Resurrection morning. Kind regards.

Kearney, Neb.

Your old friend,
RICHARD HIBBERD.

Written for The Clay-Worker.

THE SITUATION IN NEW YORK.

THERE HAVE BEEN clouds forming on the horizon for a few weeks back. The manufacturers are having a little trouble all their own. All are beside themselves in an effort to straighten the situation, but most of the producers are somewhat perplexed.

At one part of the past period there was an unprecedented drain on the common brick supply from up-river yards. The volume of building construction leaped in such rapid strides that it bid well to pass all other years in the construction annals.

Throughout this section there has been a vigorous drain on all basic materials entering into construction. The common brick supply has felt the pull even more than most of the other materials. The latter end of April showed a slight easing up, due in some measure to the speculators easing up. Some of the aspects of wartime traits are lending themselves amiably to the present situation. There seems to be an adjustment within an adjustment and if we tamper with one too much, the other is thrown out of gear.

The most oppressive of the whole is the scarcity of labor, combined with material shortage and a tendency toward upward construction costs.

In some parts of the city, material dealers have withdrawn quotations for short future delivery. This is the outcome of the inability of dealers to get brick in anything like the required quantities. In most of the surrounding country, manufacturers are completely sold out, with the main source caught with only a limited supply of the 1921 burn. This comes along at a time when the brickyard workers and laborers are striking.

To try to alleviate this trying condition, there are scouts out in other labor markets in an effort to round up help in such quantities as to break the back-bone of the yardmen's strike. This will help to some extent to keep a continuous supply of old brick moving toward the Greater City. While there are grave hopes of preventing a total cessation of building operations, there is a very possible tendency toward a slight stoppage, but from present indications, this cessation will be only momentary.

To show the greed with which the dealers take up the arriving barges, it can be shown for a period of the past three weeks, there have been seventy barges brought to the city, and of this seventy there were none left. The number received would possibly have been greater had there not been so many marooned on the mud flats of the Hudson River above the city. Reports are current that, when at one point, the rush for brick that was being unloaded was so great that the police had to be called to restore order.

The coal shortage is helping to retard some of the decisions of the manufacturers. This is seen by the fact that despite the coal strike, the fuel situation remains quite satisfactory in some plants, but there are some less fortunate and have to take the delay. In parts, some of the North River brick is being sent across to help out our sister state, New Jersey. Most of the seasonal yards in the northern part of the state have been sold out for some time.

The plants on Long Island have been reported as sold out for two and three months ahead. Enlargements have been made to the plants during the winter, and in an instance or two, more enlargement will be necessary to meet the demand that is sure to be felt when the push really comes for supplies.

With the declining surplus of common brick, the price has started to mount to a higher level. The first move was from \$16 to \$17, the next step from \$17 to \$18 and then to \$20, with the price still uncertain as to where it will stop.

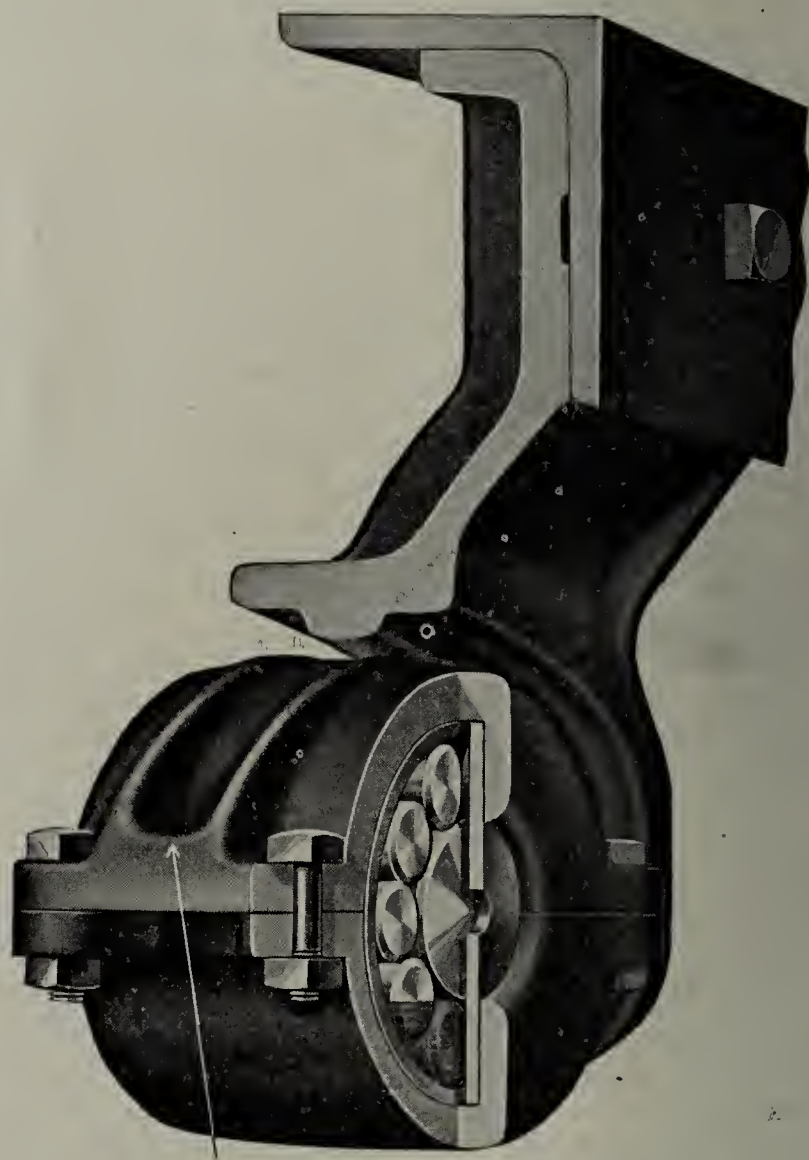
These are wholesale prices. Spot market prices are even higher than these. Raritan commons are being quoted at around \$17, with an additional dollar or two for delivery on the job. Face brick prices range between \$40 and \$45 for the Colonials, with buffs ranging around \$55, red rough textures are bringing very close to the buff prices, probably a variation of a dollar or two one way or the other.

Hollow tile is being taken in fair quantities, with quotations being given on carload lots as 11 cents per square foot for 4-inch material, 16½ to 17 cents for 6-inch material and 20 to 21 cents for 8-inch blocks.

A. L. B.

IMPROVED FLEXIBLE BOXING.

THE Chase Foundry and Manufacturing Co., of Columbus, O., is now equipping their cars with an improved flexible boxing. The bearing has the same adjustable advantages as the well known Chase Flexible Bearing for



Sectional View of Bracket and Boxing.

dryer cars that has been in use for many years and in addition it retains sufficient oil to allow the cars to pass through ordinary dryers approximately twenty times without being re-oiled. The ordinary dryer car bearings must be oiled every time the cars make a trip through the dryer; hence one can fully appreciate the great advantage this improved flexible boxing gives.

The boxing is of the split type and contains a hard steel bushing into which the rollers are fitted and a steel washer is placed at each end of the bushing, completely housing the bearings.

The flexible boxing adjusts itself to all conditions of the track, marked or other irregularities in the car frame, insuring ease of operation and minimum wear, and has a renewable

liner that brings the cost of replacing worn parts far below any previous costs.

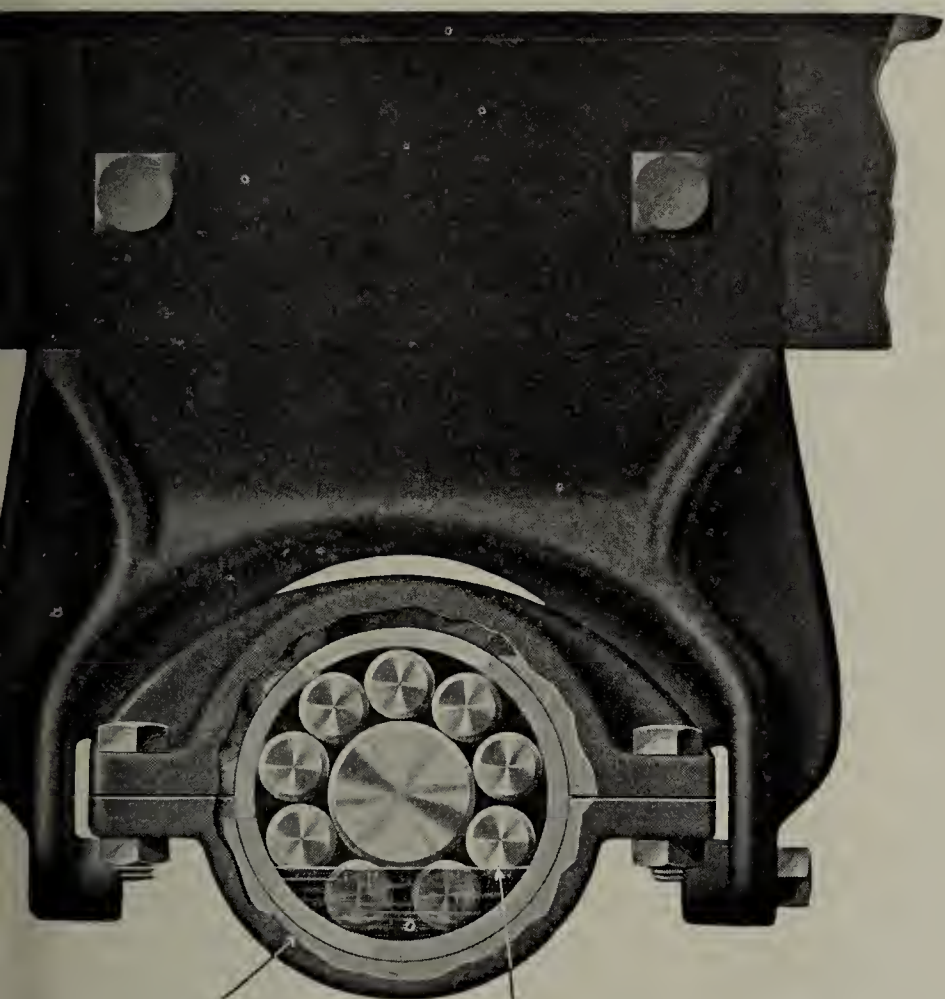
The oil container is of sufficient depth to allow each roller to be bathed to its full depth in oil with each revolution of the axle.

The illustrations show the bracket boxing and oil reservoir.

SILICA.

A REMARKABLE variety of uses for one of the most widely distributed constituents of the earth's crust—silica—is named by the United States Bureau of Mines as the result of a study of the possibilities of the material. Silica in its various forms, as quartz, quartzite, sandstone, flint, tripoli, diatomaceous earth, sand and gravel, etc., finds its way into the construction of the houses in which we live, into the tooth paste which most of us use daily, into the phonograph records which regale us with "canned music," and into the thousand-and-one glass products.

Silicon dioxide occurs in a free state chiefly as quartz, but hydraulic silica occurs as opal, flint, diatomaceous earth,



Chase Flexible Boxing and Bracket, with Oil Reservoir.

tripoli and so on. Quartz is found in many forms, the most important of which are: As vein quartz, quartzite, sandstone, silica sand and gravel, as crystals or crystalline grains, masses or aggregates in igneous rocks such as granites, diorites and pegmatites.

Free silica in its varied forms is very widely distributed, but deposits of commercial value are far less common. However, with the exception of such relatively scarce materials as tripoli and flint grinding pebbles, most forms of silica are sold for such low prices that economic factors, such as proximity to railroads and to local markets, govern the value of a deposit. Thus deposits of glass sand may be valueless if located far from supplies of cheap fuel and far from large centers of consumption for glass.

Methods of mining the various siliceous materials vary widely, dependent on the form of the material, nature and

location of deposits, and type of product to be made, the Bureau of Mines found. Most of the deposits are worked by open-pit or quarrying methods, often in a very crude way. Sand deposits may be worked by hydraulicking, by dredging or by the use of a steam shovel. Vein quartz is often obtained as a by-product in the mining of other materials. Pegmatite quartz is almost always obtained as a by-product in working pegmatite dikes for feldspar or mica.

Various forms of silica, in a finely ground state, enter into the composition of scouring and polishing soaps and powders, tooth-powders and paste. Quartz, quartzite, sandstone and sand, coarsely ground and closely sized, are used in the manufacture of sandpaper. The same material, crushed into sharp grains, uniform in size, are used in sand-blast work. For sawing and polishing marble and granite, sharp, clean sand, graded into various sizes, is used. Massive sandstone, very fine to moderately coarse grained, is used for whetstones, grindstones, pulpstones and oil stones. Chert, flint and quartzite in dense solid blocks are used for tube-mill lining. Rounded flint pebbles are extensively employed in tube-mill grinding.

In making silica firebricks and other refractories, fairly pure quartz known as gannister is used. In making silicon, ferro-silicon and silicon alloys of other metals, such as copper, moderately pure sand and massive crystalline quartz are employed. Massive quartz and quartzite are used as a flux in smelting basic ores. Fine sand and ground tripoli enter into the composition of foundry parting sand.

In the various important chemical industries, massive quartz or quartzite are used as linings for acid towers. Various forms of silica are used as filtering mediums, and pure quartz sand is used in the manufacture of sodium silicate and carborundum. Paint manufacturers employ finely ground silica of various varieties as an inert extender. Finely ground silica of all types is used as a wood filler and as a filler in rubber, pressed and molded goods and in phonograph records.

In the pottery industry, flint, chert and other forms of silica, finely ground, are used as ingredients of bodies and glazes. Pure quartz sand is employed in the manufacture of ordinary glass. Very pure massive quartz is employed in the manufacture of chemical apparatus, such as tubes, crucibles and dishes.

The manufacture of decorative materials such as crystal balls, table tops, vases and statues, the use of less common types of silica, such as rock crystal, amethyst, rose quartz, citrine quartz, smoky quartz, chrysoprase, agate, chalcedony, opal, onyx, sardonyx and jasper.

Massive and ground diatomaceous earth is employed in the making of heat insulation for pipes, boilers and kilns, and sound insulation in walls and between floors. Moderately pure sharp angular sand is one of the principal constituents of sand-lime brick. For the manufacture of lenses and accessories for optical apparatus, clear, colorless, flawless rock crystal or massive crystallized quartz is employed.

FIRE BRICK COMPANY WILL ASSIST MOTORISTS ON THEIR WAY.

The Fulton Fire Brick Company, of Fulton, has agreed to donate the brick that will be necessary to line the big oven that will be erected in the Soldier Memorial Park at Fulton, for the use of automobile tourists who pass through this city. The money needed to erect the oven will be contributed by the Fulton Commercial Club and the oven will be ready for use when the tourists begin to pass through here on the Old Trails Road. Fulton is midway between St. Louis and Kansas City and many tourists reach here either at meal time or for putting up at night in the park.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Trade Associations and the Law.

Dear Mr. Randall:

I have read with much interest the article which appeared in the April issue of *The Clay-Worker* entitled "Trade Associations and the Law." If, as you say, there is starting now what looks like a drive among commercial and business publications for a repeal of our anti-trust laws, it is being started without any adequate canvass of the men who are most vitally interested in Association work in the industries which these publications serve. True it is that the labor element has succeeded in securing a partial exemption from the operation of the Sherman Act, as has also the agricultural interest. In doing so, each of these important parts of the body politic has served notice upon the consuming public that they intend to restrict competition and restrain the natural flow of trade.

The recent "buyers' strike" came from lack of confidence. The power to purchase was curtailed by lack of ready money—a condition not entirely, but considerably due to taxation. But on top of this came the feeling that prices were too high and that being too high, they would soon reach lower levels. Hence, tomorrow was the day to purchase—not today. The Lockwood investigation in New York and its replica in Chicago did much to strengthen the public's opinion that trade associations had much to do with putting off the day of reasonable prices—postponing indefinitely the time when one hundred cents would buy a dollar's worth of labor or material. Consequently, the exposure of a comparatively small number of trade associations has, it seems, brought the entire trade association movement into disrepute.

If trade associations, as a class, were to ask for the repeal of the Sherman Act, they would be entitled to about as much consideration as would the boot-legger who declares the Volstead Act an instrument of torture.

At a recent conference in Washington, which Secretary Hoover had with secretaries of a large number of trade associations, he said: "Our costs of distribution and manufacture have increased greatly, due to increased taxation and other burdens we cannot avoid. If we would reduce these charges and thereby enable farmers to buy more and so increase our employment, we must advance in every direction to further decrease these costs and eliminate the wastes that we find. The trade association is predominantly made up of the smaller establishments. Big business can employ its own agents. It can establish its own grades and standards. It can maintain its own research laboratories. Little business can only hope to be equally informed and make equal efforts to promote its welfare through its trade associations. It is obvious that the Department of Commerce cannot establish co-operative relations with associations that maintain certain practices which have been condemned by the courts. Beyond this again, there are some two or three functions carried on by a small minority of trade associations, the legality of which has been questioned, but not yet determined. There are in the main, the so-called open-price associations, which

are collecting data on prices and sales of their individual members and circulating such data again to their members. I wish to state frankly and at once that the officers of the Government do not believe that these functions are in public interest, whether they are used in violation of the law or not. The Labor Unions solved this matter by securing legislation giving them practical immunity from the restraint of trade laws. Lately the farmers have done the same. The commercial and manufacturing community has not asked for more than some interpretative help in questions along the twilight zone of trade restraint. Obviously no Government official can interpret the law. That is for the courts. But it does appear to me that in the cloud that has gathered over the name of legitimate trade associations—a cloud we are all endeavoring to dispel—it would be worth while for many trade associations to consider this primary question: Is it worth while remaining in the twilight zone that has here been referred to?"

To my mind there is but one answer to Secretary Hoover's question. No advocate of open price work has ever successfully argued that it was not an attempt to evade the Sherman Act. In the Hardwood decision it would appear that the attempted evasion was not entirely successful. Thus the Eddy plan has proved less valuable than it appeared before Judge McCall made his decision.

The labor element with its seeming freedom from fear of punishment under the Sherman Act, the farmers with their specific exemption from its operation—both have determined to advance and maintain prices, whether the public likes it or not. They forget that they are part of the public and that no rule will work well unless it works both ways.

Trade associations can and will prosper without any change in existing legislation: Law-abiding trade associations—and this means those who not only observe existing laws, but who do not try to evade them by patented processes as devious as are some of the home-brew recipes for evading the Volstead Act—will grow in power and influence in just such measure as they are willing to take the position that while brotherhood-in-industry is a great and holy thing, there is another and bigger brother to be considered—the buying and consuming public, of which each and every one of us is a contributing unit.

Sincerely yours,

A TRADE ASSOCIATION SECRETARY.

Unfailing Signs of Spring.

Editor *The Clay-Worker*:—

In a delightful volume of dialect T. A. Daly draws a pathetic picture of the little Italian boy, who weary from long illness and the confinement of close surroundings, awaits impatiently day by day for "da spreng which bigga Joe, da Music Man, has promised all Weentra long must come some day when he shall go and play for eet."

There are many disappointments when at night, big Joe trundling his piano, returns to tell of breezes that kiss the buds upon the trees yet fail to mount to the window sill in a narrow street; but—

"Wan morna soon w'en Joe gat up

Da worl ees lika wina-cup,

So reech and sweet da air.

With smell that's stickin to it yat

From where it kees a violat."

Our office boy, who would disdain Dago birth, recently came to the cashier with the request for money for more postage stamps.

"For the love of Mike! What do you and John do with all of these stamps?"

"Lick 'em. I licked so many stamps last night I had no appetite for supper and say, whenever I can't eat, I'm real sick. Do you think Mr. Taylor would let me off this afternoon? Gee, how I would like to see today's game!"

"John says he wishes the Boss's Hibernian friend has stayed away from here on Paddy's Day. That guy started something. If 've got to keep on lickin stamps I think I'll jack up the job."

With that the kid slid about ten feet across the office floor, took one jump from the door step to the sidewalk, and went off whistling.

When Spring is in the air it's hard to keep on "lickin 'em" day after day, and it's small wonder if shipping tags get mixed so that packages for Norfolk are reported at Sioux City.

Many times some one has threatened to fire that kid, but he reappears the following morning as usual.

He, "keeps everlastingly at it." Without this, all effort at accomplishment seems to avail but little, whether it be directed toward business or politics, diplomacy or world wide peace agreements.

Do we ever earn the right to quit or to "jack up the job?" Philadelphia, May 6, 1922. J. H. Chambers.

A Veteran Brickmaker Still on the Job.

My Dear Mr. Randall:

I am very sorry I could not attend your convention at Indianapolis. Owing to a death in our family, I was compelled to remain at home. My wife is now visiting in the east. That is why I could not accept your invitation to the convention.

Since the convention I have noticed in the columns of The Clay-Worker several were there whom I formerly knew. I will mention Mr. L. W. Penfield, though he perhaps has forgotten me by this time. I am an old time clayworker, from hand molding up to the latest improvement. I am 60 years of age, started in the business when I was a lad of 12, far out in the country, as an off bearer, carried three bricks in an old wooden mold. We made four thousand, set four thousand for a day's work, with two boys and three men. We had an old mill with a sweep on it and one horse traveled around the ring.

My job was to carry out the brick in the yard with the aid of another boy, and lay them down in a nice straight line. My partner could not help but pile them up on one another, so I wore out three boys that summer. Then I had the nerve to scream for the next days also. I had four thousand brick to edge and hack by my lone self. My partner was a fat chubby boy, and could not get around very lively, so he would take the old critter and haul the water to soak the pit over night. You see when a boy is willing they often take advantage of him.

The next season or summer I stood by the molder's table and made my five thousand a day, and I held the job down. I was then but 13 years old and can do it today, had I the chance. I made hand brick over almost all of Belmont County, Ohio. Since those days I have traveled in every state in the United States, superintending, building and installing clay products plants and I am at the same old job.

I just finished building a new floor in one of our down draft kilns. I changed from a single stack to a multiple stack, six stacks to one kiln. I could never get the bottom hard enough, but it was not the cause of the stack, it was the way the first floor was built. But the stacks were leaning some and I was afraid in time it might go over. This is why I made the change, although I believe the multiple chimneys are the best in every respect. I did the brick work myself.

I manufacture mostly drain tile and have no trouble to dispose of all I can make at a good price, 4-inch tile, \$50 per thousand. I have a good opening for some tile maker to come and join me. I have plenty of orders now.

I made a trip east in 1920 and visited my old home, Demos, Ohio. From there I went to Selma, Ala., and called on the Kahn Brick Company. Mr. A. G. Kahn is the president, and found him to be a very live wire and a gentleman, the owner of a very up-to-date plant. In due time I returned to Ohio; in the spring of 1921 I started on my journey for Mt. Vernon, Wash., where I own my brick and tile plant. On my way back I intended stopping off and paying you a visit, but was unable to do so.

I hope to meet with you some day face to face, for I have been a subscriber to The Clay-Worker for a great many years and have always found you a live wire editor, trying your best to build up the brick industry. Find enclosed a check to apply on my subscription and forward same again to Mount Vernon.

Wishing you and your family health and success in your field of labors, I am,

Respectfully yours,

C. B. Mayhugh, General Manager,
Mt. Vernon, Wash. Star Brick & Tile Plant.

BRICK PREFERRED FOR ROAD CONSTRUCTION.

The state board of highways, at the urgent request of the persons living along the route, have designated brick as the material for building the road near Moberly, Mo. The brick to be used will be furnished by the Moberly Paving Brick Company. While the cost of paving by brick will be greater than by concrete, the property owners and the commission decided that the road would be so much more durable that brick was decided upon. It is said that the request for the brick among the persons interested in the road project was almost unanimous. When it was learned that brick was to be used, the extension of the road to the country club was asked for and \$8,000 will be raised by popular subscription and deposited with the county court to pay for this extension.

USE OF TAR FOR SURFACING ROADS.

TARS AND TAR products are fast replacing mineral-oil products for surfacing roads, says the United States Bureau of Mines in Technical Paper 268, recently issued. This fact may be variously ascribed to the increasing supply of suitable tars, the decreasing supply of suitable mineral-oil products, increased appreciation and recognition of the suitability of tars, and the more general availability of tars in practically all parts of the country.

In Great Britain in 1907 there were only 100 miles of road covered with tar or tarry mixtures, whereas in 1908 there were 700 miles; in 1909, 3,000 miles; and in 1910, 7,000 miles of such road.

A number of specifications have been drawn up for the tar to be used for this purpose, a fact not at all surprising in view of tars being produced under so many different conditions, and the roadbed, surfacing materials, and traffic and climatic conditions differing widely from place to place. Road tars are used for various purposes, and may be applied in different ways to obtain a particular result—a further cause for the wide variance in specifications. They may be used as a binder in place of cement, as in bituminous macadam roads, for dust-settling purposes or for cementing material—grouting—in the construction of brick, stone, or wood-block pavements. Although the material used for these purposes is usually either a soft pitch or a refined tar, or a mixture of the two, it is quite generally termed "road tar."

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

THE REBURNING OF PARTIALLY BURNED BRICK.

QUESTION: I would like to know if brick that have been half burned could be fired and reburned with any kind of success. About a year ago I bought a plant at St. Michaels, Md. There was a kiln of brick partly burned, but the doors had not been put up properly, and the former owners had given up the kiln as a loss. I moved all of the brick and put them under a brick shed. I have been told these brick may be reset and burned. I am having success with my new made brick, and don't want to risk the other job, unless I know some one else has had experience along such lines. I find The Clay-Worker a great benefit and hope to hear from you soon in regard to above. I am young in the business, and want to get the best results possible.

ANSWER: The reburning of soft brick is done regularly in many plants and many other factories when they get soft burns reset and reburn the soft bricks. I do not think the product is quite as good as the original product, at least this is my experience, but it is salable. For one thing, the handling breaks off corners and edges, and the product is rougher, and in my experience, the reburned bricks do not have as good a bond as the original product when properly burned. I doubt the satisfactory results of a soft brick which has stood three years, probably been soaked with water, and perhaps frozen. Such a brick will have the original bond shattered and reburning will not re-unite the broken bond, at least not to compare with the original product. I question the advisability of resetting these soft bricks, and first I would set a few of them to determine the results. It may be more profitable in the end to scrap them and take the loss.

CAREY P. ELLIS.

RELATIVE HEAT UNITS IN COAL.

QUESTION: Kindly give me the relative heat units in Western Kentucky coal, Gas House coke and hickory wood, to be used for brick burning in up-draft kilns.

Answer: Relative to the heat units in western Kentucky coal, gas house coke, and hickory wood,—

The average of four U. S. tests of Kentucky coal gives the fuel a value of 13,430 B. t. u. This probably includes eastern as well as western coal.

Kent gives the value of western Kentucky coal as 13,700 to 14,430 B. t. u.

I doubt if it would be safe to use any of these figures for the average western Kentucky coal as the value contained in the coal delivered at the factory. I would not use a figure higher than 12,500 B. t. u.

Coke will vary from 11,500 B. t. u. to 14,400 B. t. u., and for the purpose of any calculation one should use the same value as for coal, unless it is a question of purchasing on the basis of the heat value and in this event one should have the heat values determined. There is too much variation in both the coals and coke to accept any published figures.

The value of hickory wood ought to be definitely determined because of the slight variation in the wood, assuming that it is dry, but published data differs widely.

One engineering hand book gives the value at 8,400 B. t. u. and another at 5,000 B. t. u. Kent gives the value 4,500 pounds of hickory equal to 1,800 to 2,000 pounds of coal but does not give the value of the coal in question.

The latter figure is not far from correct and it is only slightly higher than the customary valuation of one cord of wood as equivalent to one half ton of coal.

In making estimates of fuels, I generally use 12,500 B. t. u. as the approximate value of bituminous coal from the central district and reckon wood at one cord equal to one-half ton of coal but all hickory wood should have a somewhat higher value than this because it is heavier and Kent's figures are probably not far from correct.

—Carey P. Ellis.

CURRENT NOTES OF THE TRADE.

The Tuttle Brick Company of Middletown, Conn., has purchased the brick plant of James C. Lincoln at Newfield, Conn.

A. J. Laurensen and William F. Johnson of Norfolk, Va., have leased the plant of the Snowhill (Md.) Brick Company, which they will operate this summer.

The marriage of Fred W. Salmen, the well known New Orleans brick manufacturer and son of Fritz Salmen of Slidell, to Mrs. Evelyn Harris, took place at New Orleans April 19. Mr. Salmen and his bride left for an extended trip to Europe immediately following the ceremony.

The Ohio Farmers Clay Company at Orrville, Ohio, will make a number of improvements in their plant, including the building of a large waste heat dryer, clay storage bin, several additional dry kilns and the installation of machinery for digging the clay. The equipment contemplated will increase the capacity of the plant and at the same time lower the cost of production. C. P. Funk is general manager of the company, which has general offices at Wooster, Ohio.

The Mason City Brick & Tile Co. of Mason City, Iowa, of which B. C. Keeler is general manager, started operations in the drain tile department for the season late in April. The company employs about 200 men when running full handed. While there has been no remarkable sale of tile during the past year, the continual filling of small orders has nearly emptied the yard. In order to get ready for the business the company feels sure will develop during the year, the plant will be put on a full time basis.

An expert engineer and a force of workmen have begun to make tests of clay deposits on the Davis land, near the Rich Hill Tile Company plant at Rich Hill, Mo., and will thoroughly look into the possibilities that underlie this land. The tests are being made at the instance of the W. S. Dickey Clay and Tile Company of Kansas City. If the tests prove satisfactory the company plans to re-open the plant here and manufacture tile and brick products on a larger scale than ever before.

The properties of the Terre Haute (Ind.) Vitrified Brick Co., on the St. Mary road, including all of the real estate, buildings, kilns, engines, boilers and other equipment, have been sold to John R. Root for \$75,000, according to a report filed by William K. Hamilton, receiver, appointed by Judge John E. Cox in the superior court. The sale was completed April 20 at the office of the United States Trust Company, the bid of Root being the highest of two bids received for the

property. The other bid was made by Joseph Entwistle and amounted to \$70,000.

BURNERS RECORD CARDS.

A PRACTICAL CARD for the use of burners in recording burning temperatures and for general statistics on production, labor and material used in being distributed gratis to the trade by the Brown Instrument Company, Philadelphia, Pa.

BROWN Production Cost Card

Kind of Ware Burned

Quantity Produced.....
 { Firsts
 { Seconds

Details of Productive Labor

Pit Labor.....Hours \$
 Mixing and Molding Labor " \$
 Drying Labor..... " \$
 Kiln Labor..... " \$
 Totals..... Total Labor Cost \$

Details of Material Used

Clay—Yards..... \$
 Fuel Consumed..... \$
 Water, etc..... \$
 \$
 \$
 Total Material Cost\$
 Plus Overhead Expense.....\$
 Total Mfg. Cost.....\$

Facsimile of Brown Production Card.

These cards help to standardize production for they give the burner a mark to strive for and the superintendent a production schedule for maximum firsts and a minimum of seconds and a co-operation between the two that works for a saving in fuel due to the better system, more uniform burn and the shorter time required in the firing period.

On one side of the card are blank space left for Kiln No., Date, Time started, Time, Temperature wanted and Temperature obtained. In keeping this record they will find just where the greatest success lies and a consistent effort to keep the burning up to the proper standard will make for much more satisfactory results.

The reverse side of the card is for the use of the superintendent. This is styled the production cost card and gives space for the recording of the kind of ware burned, quality produced, firsts and seconds, details of productive labor such

as pit labor, mixing and molding labor, drying labor, kiln labor and totals together for hours and salaries also details of materials used such as clay (yards), fuel consumed, water etc., total material cost, plus overhead expense and total manufacturing cost.

The Brown Instrument Co. will gladly mail a quantity of these cards free of cost to any clay product manufacturer making a request for same.

BUILDING OFFICIALS CONFERENCE IN INDIANAPOLIS.

The eighth annual meeting of the Building Officials Conference was held in Indianapolis the week of April 25, with headquarters at the Lincoln Hotel.

An interesting program had been prepared and many valuable points were brought out in the reading of the papers and the discussion of same.

Mr. Rudolph P. Miller served admirably as president of the conference. The sessions occupied the mornings and afternoons of Tuesday and Wednesday and the afternoon of Thursday. Thursday morning there was a joint session with the Indiana Limestone Quarrymen's Association, while Friday was given over to a trip through the quarries at Bedford, Ind.

During the Thursday noon hour there was a demonstration

BROWN BURNERS RECORD CARD

Kiln No. Date Time started

Time	Temp.wanted	Temp.obtained

A Portion of the Reverse Side of Card.

showing the use of the Mann trowel for faster and cheaper bricklaying.

The conference voted favorably for the passage by states of legislation which would require persons who engage in the design or construction of buildings to be an architect, engineer and superintendent of construction of recognized standing, and also for the passage in cities and towns of chimney construction as approved by the National Board of Fire Underwriters, due to the large number of fires, direct result of defective chimneys.

ILLINOIS PLANT CHANGES HANDS.

The Carlinville Clay Company has sold its plant, located at Carlinville, Ill., to H. M. Baldrige of Illipolis, Ill. Mr. Baldrige will continue to manufacture drain tile, building tile and silo blocks and may later add machinery and kilns to burn paving brick. Mr. McIntosh, who for the last ten or twelve years has been manager and general superintendent of the Clay Company, has suffered a breakdown in health and for the last two years has been unable to give but little attention to the business and the last year has been practically incapacitated for any work.

Mr. Baldrige is a veteran in the clay business and thoroughly understands the manufacturing of drain tile and building tile. The bed of shale and clay owned by this company is one of the best in this section of the state, and they make a high grade of tile. The business will be continued under the style of the Carlinville Tile Company. Mr. Baldrige will have associated with him, his son, B. C. Baldrige, of Rives, Tenn., who has been raised in the tile manufacturing business, and operates a plant at Rives, Tenn.

Written for THE CLAY-WORKER.

MISSOURI HAPPENINGS.



MILE AWAY ON A BUSINESS TRIP recently, C. O. McNamee, general manager of the Fulton Brick Company at Fulton, was honored by being nominated for mayor of Fulton by the Republican party, but upon his return to this city he declined the place. Mr. McNamee told the Republican leaders that he is out of town so much on business for his company that it would be impossible for him to look after the business of the office, should he be elected. Mr. McNamee is quite active in Republican circles of Fulton and Callaway county and some time ago was appointed a member of the board of managers of the Missouri School for Deaf, a local educational institution under the control of the state, the appointment being made by Governor Arthur B. Hyde. Later, Mr. McNamee was elected president of the board. He finds that this position takes about all the leisure time he has when he is in Fulton and for that reason could not see his way clear to accept the nomination. Republican leaders felt certain that he would have made a formidable candidate, in spite of the large Democratic majority in the city and regretted his refusal to accept. A committee will select some one to fill the vacancy. Mr. McNamee has been in Fulton only a few years but already has become a prominent factor in the business life of Fulton and is an active member of the Commercial Club, before which he has spoken on several occasions.

The Missouri Clay Mining Company, Poplar Bluff, Mo., has filed articles of incorporation and with a capitalization of \$100,000 will work the ceramic deposits discovered near Poplar Bluff by John Denton of Ozark. Mr. Denton will be a member of the company. Mr. Denton is well known in southern Missouri as a clay expert and he has in mind the development of several other clay fields in that section of the state. He spoke before the Commercial Club of Springfield recently on the possibilities of developing the ceramic clay deposits in the Missouri Ozarks.

Walter Casto, an employe of the Moberly (Mo.) Paving Brick Company, brought suit in the circuit court at Moberly for \$3,000 against the company, alleging that he was injured while working in the mine of the paving company. He charged that while entering the mine a lot of shale, rock and debris fell from the roof and injured him about the chest and limbs. The suit was to come up at the February term of circuit court in Moberly.

J. E. Durkee of Mexico has moved from St. Louis to Minneapolis, where he will take the place of Herbert Plunkett as manager of the Minneapolis territory of the A. P. Green Fire Brick Company of Mexico. Durkee went to St. Louis about a year ago, where he was engaged in the fire brick business.

Fred Ulrich, a former employe of the Wellsville Fire Brick Company, and well known in this city, died at his home in St. Louis, to which city he had removed about a year ago.

The plant of the Wellsville (Mo.) Fire Brick Company is being operated now at full capacity six days in the week and a lot of high-grade product of the company is being shipped out each week. The company at the present employs about 200 men and this force is to be augmented if the plans the company has under consideration materialize. The present operating conditions here are regarded as unusual since there is a slight depression in the fire brick business of the country.

The St. Louis County Plant of the Alton Brick Company of St. Louis has been awarded the contract to furnish the matt brick for the new \$100,000 ward building at the Fulton

State Hospital in Fulton. The board of the institution reserved the right under the contract to specify what kind of brick it desired for facing, and selected the product of the St. Louis County Plant from a large number of offerings. R. L. Mernagh of the St. Louis County Plant was present in Fulton when the contract was awarded and explained the merits of the brick to the board. The brick will be used by the Murch Brothers Contracting Company of St. Louis, which was awarded the general contract. The St. Louis County Plant of the Alton Brick Company has been successful recently in getting contracts for its matt brick and will furnish the brick for the new Science Hall of Stephens College at Columbia and the large addition to the Koxset hotel at Mexico.

G. W. Cross, president of the Cape Girardeau Press Brick Company, says his company has enjoyed a splendid business in southeast Missouri recently and the indications point to a splendid business in the future. Cross declares that the brick of the local company sells at a less price than almost anywhere else in the country, although the brick are first class. He said that a concern in the northern part of the state makes brick for less price but that the quality of the product is not as good as the local brick. The merit of the Cape Girardeau brick as a building material has won the approval of contractors and builders and many of them recommend the local product in contracts. The company makes and deals in all kinds of brick.

John Sharp, an employe of the Wellsville Fire Brick Company, got his hand caught in a mixing machine at the plant and several of his fingers were badly crushed. He will be laid up for some time.

The city council of Trenton, Mo., has passed resolutions calling for the paving of seven of the principal streets of the city. As soon as the necessary legal preliminaries can be disposed of, bids will be asked for the work.

It is believed that the china clay industry in the Poplar Bluff vicinity will be revolutionized as the result of the discovery of E. G. Doane, mineral engineer of this city, who has found a new deposit of china clay near this city. The deposit is said to be of almost unlimited quantity and the mining of the product has started. Indications are that the supply in the mines near this city is of sufficient amount to supply American potteries for years. Efforts will be made to push the mining of the product and the industry is expected to be an important addition to the business life of Butler county and Poplar Bluff.

The W. S. Dickey Clay Company of Kansas City has secured an option on the S. M. Davis land northeast of Rich Hill. The option has been held for some time but announcement of it was not made pending further developments. The Dickey company, it has been announced, will put engineers in the field to fully determine the value of the clay deposit on this land before announcing definitely the reopening of the plant and more extensive operations. If the clay is found in the quantity and quality that is now believed, this industry will be one of the most important in Rich Hill in a few years.

The business of the Harrisonville Brick & Tile Co. at Harrisonville has been most satisfactory recently and the business is being conducted quietly and without flurry under the capable management of C. L. Gard, who is putting out a product that is finding a ready sale everywhere. The company has established a record of five car loads of brick daily and is selling every one of them at a satisfactory price. The plant has been operated throughout the winter at capacity and has given employment to seventy men, nearly all of whom are residents of Harrisonville. Superintendent Gard says the company has adopted the policy of giving employment to men who already are established in Harrisonville. He has found such men steadier and more reliable, and

consequently of greater value to the brick plant. The fact that the plant was running at capacity during the winter, when business conditions were bad, makes Mr. Gard feel that the future holds a cheery outlook for the concern. Several weeks ago the plant eased down on the manufacture of brick to make some tile, and as a result it fell behind in its brick orders and the plant has to be speeded up now to take care of the new business in brick orders.

PLANT OF PARK BRICK CO. BURNED.

THE BRICK YARDS and equipment of the Park Brick Company, Hartford, Conn., having a yard of 6,000,000 capacity annually, were totally destroyed by fire Saturday, April 30, damage, \$100,000. Fire was probably caused by sparks from a passing locomotive. The yards are located alongside of the New York, New Haven & Hartford Railroad. The fire was discovered by employees just leaving after the day's work. The yards were practically wiped out in a few hours. There was delay in the arrival of fire apparatus and inadequate fire equipment for a time. The yards are in the Elmwood section of West Hartford and the town's fire apparatus is limited. The Hartford City fire department on its plan of mutual aid came to the assistance of the West Hartford department and saved office and garage buildings.



*Ruins of The
Park Brick Co's.
Plant Hartford, Conn.*

Decision on the plans for the future will be delayed while President George H. Todd is in communication with other officials of the company. F. H. Brockett is delayed in his return from Florida, owing to the illness of his wife. H. L. Thorpe, another partner, died several months ago and his estate is now being settled, so that under the circumstances a decision cannot be reached immediately. If reconstruction is decided upon it may take place on the present site. However, it is possible that a new location may be considered. President Todd may decide to favor the drier mode of manufacturing in place of racks. The yards just burned had racks for 600,000 bricks. Little stock was in storage at the time of the fire.

POWER AND ENGINEERING EXPOSITION.

ANNOUNCEMENT is out that there will be held a National Exposition of Power and Mechanical Engineering at the Grand Central Palace, New York, December 7-13, inclusive. This exposition is to follow immediately after the annual meeting of the American Society of Mechanical Engineers and it is expected that the exhibits will supplement the program and discussions at that meeting. There will be during the exposition a discussion of fuel, stokers, steam power plants, railroads, and so on. Those desiring more specific information about it may write the National Exposi-

tion of Power and Mechanical Engineering, Grand Central Palace, New York City.

HUDSON RIVER COMMON BRICK AT \$25.

A BOMB WAS THROWN into the building trade of New York, May 15, when Hudson River common brick was advanced to \$25 per thousand because of the shortage of brick reported in all of the yards. Laborers in the brick yards have been granted increases in order to prevent grievous delays in shipping, to enable holders to meet the abnormal demand anticipated, as there are still many projects unfinished that will require vast quantities. In fact, the work already started will demand more common brick than is available in this market, and will not be supplied because of the inability of brick manufacturers to increase their production sufficiently to meet the requirements. However, it is claimed by manufacturers in this district that with the wage increases granted it is thought that the action will insure continuity of production over the stress period.

The next eight to ten weeks are likely to be acute in the building industry of this section, now fast reaching its apex, but after a careful analysis of conditions and all factors governing fundamental conditions of supply and demand, that the price peak at \$20 had been reached, providing tendencies

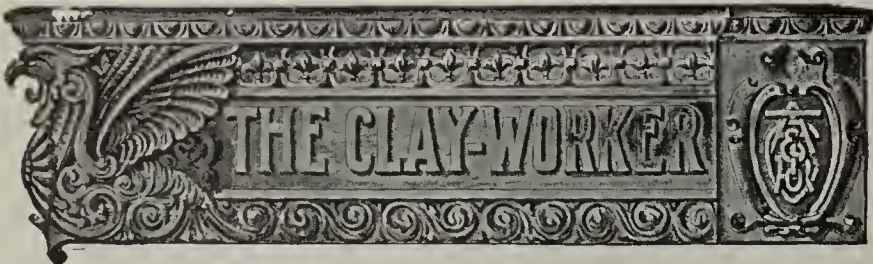
to stampede the brick supply as they arrive in the market are restrained as effectually as they have been up to the present time.

Thirty-six barge loads, averaging 400,000 each, arrived in the market during the week, but were immediately absorbed at prices ranging from \$18 to \$20 wholesale. The last previous estimate of Hudson River brick supply available for New York was placed at 15,000,000 brick.

Prospects are for a higher brick production during this year, especially in the Hudson River districts, when the usual production record has been 1,200,000,000 brick. It does not seem possible that even with 80 per cent of the machines in operation this year, there will be an over supply, as the fall building projects give promise of having the same impetus as the early spring, with more interest at the present time centering around the habitual construction.

Due to the shortage and the advanced price of brick, other building materials are being quoted at higher figures in this district, although it is thought that the present condition will only be temporary.

Some think that the law of supply and demand is inoperative at the present time because of unusual conditions, but if those who think this will just be patient and watch it awhile they will see that it is still on the job, and is operating.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

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THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77. May, 1922. No. 6.

CURRENT COMMENT.

The building boom is on.

* * *

If you are not busy you ought to be.

* * *

Business is now getting out of slow gear in all sections.

* * *

A man is seldom really down and out until he gets down in the mouth.

* * *

It's a pretty slow town that isn't able to stir up something of a building boom this year.

* * *

Those who got busy early and got a good stock of brick and hollow tile ahead are now in position to profit from it.

* * *

Why shouldn't the radio idea grow rapidly in popular favor? It is about the speediest means of message transmission ever yet discovered.

* * *

The hollow tile division is centering quite a lot of interest on the local dealer this year and it will likely reap future harvests from it, too, because the dealer interest can be made a big factor.

* * *

Admittedly a full brick wall or a hollow tile wall faced with brick is better than a frame wall veneered with brick, but we must also admit that veneering the frame home instead of weather boarding it is an improvement.

* * *

The big problem in promoting home building is that of helping the home builder to finance the undertaking. For this reason clayworkers may well give a little more attention

to the matter of home financing as a factor in selling their product.

* * *

It doesn't matter much how big a fund of knowledge a man possesses, unless he puts it to good use.

* * *

Common sense may be the foundation of achievement but most of us aspire to climb as far above the foundation as possible.

* * *

The present year should bring most of the farm fraternity out of the grouches as well as stimulate industry and commerce generally.

* * *

It ought to prove a good year for the machinery and supply division, too, because the speeding up all around is leading to greater needs in this line.

* * *

It may seem rather early to be talking about a car shortage, yet, but if business keeps speeding up we will likely meet just such a condition before the summer is over.

* * *

By and by when hollow tile basement walls are made popular it should be also practical to popularize the idea of a tile for the basement floor similar to the porch floors of which we ought to have more.

* * *

Secretary Hoover has demonstrated that he has a good head for business. Now if the congressional leaders will just demonstrate heads equally as good in statesmanship we can soon be resting easier about the future.

* * *

This summer will likely see the building of many new porches with brick piers and parapet walls. A share of these will be added to frame houses and in time they will lead to the replacing of frame structures with brick.

* * *

There has been a great lot of discussion about the best way to use a million dollars. The first problem is to get the million, and generally by the time a man gets it he has had time to think of a dozen ways to use it. And as to there being a best way, people will never agree on that.

BRICK ROAD BOOSTING.

It is good to note that there is a fair share of persistent activity in the industry to promote a more extensive use of brick paving for roadways as well as for streets and alleys. Persistent boosting of this, along intelligent lines, with continued research work and instructions in detail as to the best form of roadway, will not only mean better business for the paving brick industry, but it will mean a better order of roads for the country.

TRADE ASSOCIATION REGULATION.

There is report of a bill by Senator Edge in Congress to define legal activities of trade associations and let these associations know just where they stand. It is said, however, that prompt action is not likely on it because the Senator has also offered a resolution providing a committee of three representatives and three senators to investigate the whole situation.

What will come out of this may be good and may be poor depending upon the attitude of Congress and the co-operation and understanding between Congress and the business world. Meantime Secretary Hoover is doing some splendid work in developing a spirit of co-operation between government authorities and trade associations.

If we can have the same spirit in the framing of regula-

tions as has been manifested by Secretary Hoover of the Department of Commerce, both associations officials and the business world generally, will welcome it. If it is another spirit, that which actuated the Sherman Anti-Trust law, it means trouble all around and no constructive results. Let us hope the congressional efforts will be imbued with the same spirit which seems to have actuated Secretary Hoover and that we will get good out of it.

THE BUILDING SITUATION.

The building situation is developing some interesting features now. Reports indicate that it is taking on the nature of a boom in many sections, which is resulting in a scarcity of labor and material and is threatening to lead to higher cost through increased wages and high prices for material.

About the worst thing that could happen right now, would be such a sudden boom as to bring a sharp increase in cost because this, in turn, would bring a reaction and put us back to the condition of 1920 again. Surely it will be practical to keep building operations in fairly high gear and still the situation under control as to material and help and prevent cost from going skyward. If we can do that we are in for probably the biggest year on record in building operations.

BASEMENT WALLS.

Let us go after the basement wall, there is a big field here that should yield good returns. Concrete makes a good foundation and it makes a serviceable basement wall when put up in monolithic form. Hollow building tile, however, makes a splendid basement wall, and above grade is more ornamental than the monolithic concrete, and on the whole, a better wall than concrete blocks. There is evidence, too, that tile manufacturers are manifesting a deeper interest than formerly in the subject of basement walls and there is room here for a lot of good salesmanship in the tile industry to put the hollow building tile idea across for basement walls. It is simpler and easier to make than a concrete wall and there are a number of interesting things to commend it. Let up keep busy on this idea and make the pushing of hollow tile for basement walls a feature of the year.

HOME FINANCING.

One of the features developed out of the Building Industries Conference and the Lumber Congress following at Chicago, recently, was that the main need in promoting more home building is available money to loan on home mortgages and a sensible system in each community for financing the home builder so that he may pay for his home on the installment plan while living in it. Generally, too, those material people who help with the financing, also help themselves to get business.

The first problem is that of a source of funds to be loaned to home builders. The biggest source of funds of this kind is in building and loan associations. Other sources are insurance funds, trust companies, and saving bank funds, and it is encouraging to see more of these available now for first mortgage loans on homes at reasonable interest.

The big problem, however, that makes up the connecting link is the second mortgage problem. It is one thing to get funds for a first mortgage covering 50 or 60 per cent of the cost or value of a home, and it is something else to bridge the distance between that and the stake the average man has to start with, who desires to build a home. The con-

necting link here is a second mortgage problem and it is in the main a local proposition, mainly because in each case the interest is local and it furnishes the personal knowledge and contact necessary for the safety of these second mortgages.

Those interested in financing home building should, therefore, canvass the plans for developing practical means to finance and carry second mortgages, for the more of this you can do, the more easily you can promote active home building in the community.

CLASSIFICATIONS OF BUILDING OPERATIONS.

Reports on the classification of building operations show that individual homes lead the list this year in point of total value. Take the whole residential group, including apartments, clubs and hotels, it represents close to 40 per cent of the building activities of the season. Other classes of buildings in the order of their importance are factories, stores, office buildings, garages, schools, amusement places, hospitals, churches and public buildings.

THE BRICKLAYER AND THE CARPENTER.

Figures compiled by the Building and Housing Division of the U. S. Bureau of Standards indicate that the carpenter has the best of it over the bricklayer no matter whether homes are built of lumber or of brick. In other words, even in the building of brick homes, there is more work and more pay involved for the carpenter than for the bricklayer. The figures, as compiled, show that in the cost of erecting a frame house 49.6 per cent is for carpenter work, while only 6.2 per cent is for brick work. The figures for the brick house show 32.2 per cent of the work cost going to the carpenter, and only 21.5 per cent to the bricklayer. So the carpenter contractor should not feel that he is losing his job when people turn to brick and hollow tile because even at that the carpenter seems to have more work to do in the building of a home than the bricklayer, and to get more out of it.

DIVISION OF INDUSTRIAL RETURNS.

We hear a lot of talk about the worker being a producer and the employer getting the major part of the returns from the worker's productive efforts, so some facts brought out by a survey made by the National Bureau of Economic Research should be interesting. These show that in the leading organized industries of the United States, wages and salaries during most of the time since 1913, were about 70 per cent of the total income, while capital (including management) received about 30 per cent out of which to pay rent, interests and profits. The report says the proportions vary some with different years but on the whole, labor receives about 2 to 1 in wages and salaries for the part returned to capital and management, and out of the latter must come depreciation, upkeep, interest and so on. There is not much room for spellbinders to talk slavery and poor returns to workers in the face of these figures.

WHAT A DIME WILL BUY.

In Material Facts, a little monthly publication issued by the Cleveland Builders Supply & Brick Co., there was put forth recently one of the most graphic illustrations of what a dime will do that we have so far encountered. It was a picture story, spread out across two pages with the headline "A Dime WILL BUY,—" four face brick, or a cigar, or seven common

brick, or a loaf of bread, or a piece of oak picture molding, two feet long, or three 5x4x12 hollow building tile, a piece of 3x4x8 bevelled siding a foot and a half long, or a piece 2x4x2 feet, 9 inches long, or two 5x8x12 hollow tile." Each of these items is pictorially illustrated and it makes an impressive story as well as a good sermon on saving, buying and building.

DRYER CARS AND CLAYWORKING EQUIPMENT.

Frank H. Robinson, Pittsburgh, Pa., has favored us with an interesting leaflet entitled "Bulletin No. 1, Supplementing Catalogue No. 12." The bulletin illustrates and describes a line of dryer cars and clayworking equipment, including dryer car lubricant and kiln bands which he is offering the trade in any quantity desired. They each and all represent Robinson quality which is generally recognized by the trade as being high class. Copy will be mailed to any of our readers requesting same. See ad on outside cover.

ARCHITECTURAL LOVE LETTERS.

For some time Irving A. Ryttenburg, the dynamic president of the Sumter Brick Works, Sumter, S. C., has been sending to architects and prospective customers over the country a series of most unique letters. Doubt if their equal had ever before been received by any architect. "Ryt" styled them "Architectural Love Letters" and through them he has succeeded in wooing many architects so successfully that they will specify "Dixie Texture" and "Airedale" Brick in future jobs where they want an unusually beautiful effect. The letters have proven a very effective bit of advertising, and have now been published, together with many of the replies received, in a very attractive little pamphlet, which we judge the Sumter Brick Works will send to any one asking for same.

PERSONAL MENTION.

Henry C. Kleymeyer of Evansville, Ind., is one of the busiest brick men in the state, but found time to look in on us recently during one of his flying trips to Indianapolis. He reports business booming in his section.

W. D. Richardson, president of the Ceramic Engineering Company, Columbus, Ohio, reports he has just returned from an extended trip through the East. He has recently moved his headquarters from 2782 North High street, where he has been located for a number of years, to 1466 Michigan avenue. Mr. Richardson is now in the proud grandfather class. We recently received announcement of the arrival of a baby girl at the home of Mr. Richardson's oldest daughter, Mrs. John E. Thompson, Ely, Minn.

William Conway, the veteran brick manufacturer of Philadelphia, together with his family, is making a motor trip to the Pacific coast. They spent several days en route in Indianapolis and Mr. Conway was able to take in the Home Complete Exposition. Word received from various points along the way reports the entire party in good health and very enthusiastic over their trip.

Richard S. Requa of California, the inventor of the Universal Unit hollow tile, was a recent visitor at The Clay-Worker office. He is spending some time in the middle West in the interest of his tile, and has succeeded in arousing quite a little enthusiasm among builders and architects, as well as brick and hollow tile manufacturers.

Douglas Stevens, the hustling third vice-president of the N. B. M. A., who owns a plant over at Cayuga, Ind., and lives over in Danville, was a welcome visitor early in the month. Like all the other brick men, Mr. Stevens is busy these days, but still finds time to give some attention to the N. B. M. A. and A. C. S. affairs, as he is much interested in both organizations.

F. H. McFall, manager of the McFall Engineering Company, Alliance, Ohio, stopped off in Indianapolis recently en route to Texas, whither he had been called to give some advice relative to installing his oil-burning equipments on a number of brick plants. Business is good with Mr. McFall, for brickmakers are learning to appreciate his equipment more and more.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC..

required by the act of Congress of August 24, 1912, of The Clay-Worker; published monthly at Indianapolis, Ind., for April 1, 1922.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) Theo. A. Randall, Editor.

Sworn to and subscribed before me this 22nd day of Mar., 1922.

(Signed) CHRISTA A. LEWIS, Notary Public.

(Seal)

My commission expires June 30, 1925.



Paved Roads

BY THEIR DEEDS YE SHALL KNOW THEM.

Paving brick—by the superior service they give—justify the extra cost of construction of a brick road.

Likewise, the American No. 290 Auger machine—because of the superior service it gives—justifies the extra quality we put into it.

The American No. 290 is particularly adapted for making superior paving brick, but it is doing record-breaking work on other Clay Products. "Its Deeds Make it Famous," as its users will testify.

WHERE IS IT USED?

Successful plants use it as a pace maker. It speeds production and cheapens cost.

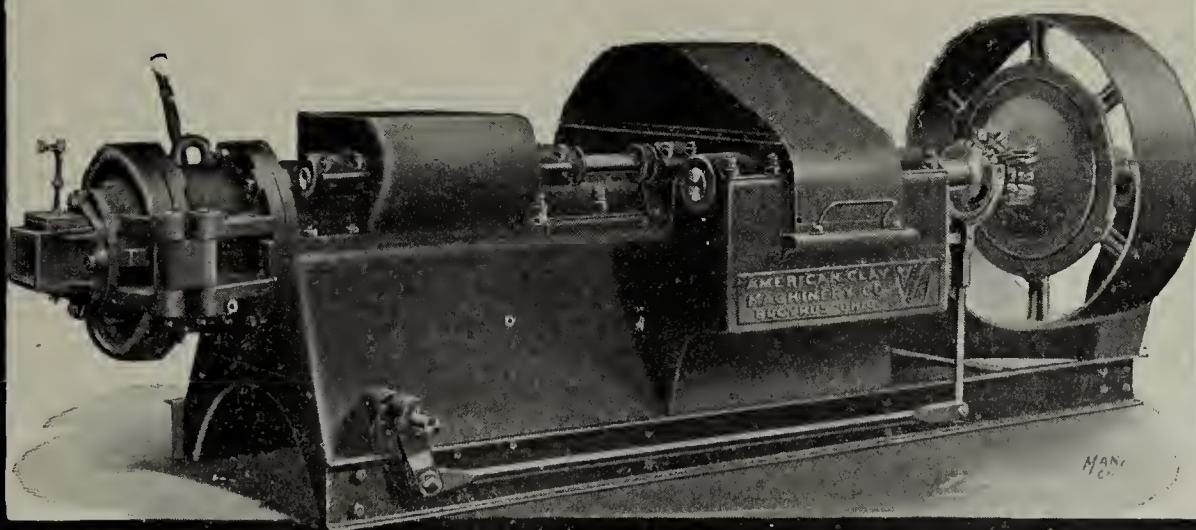
But to be specific, it is used by—

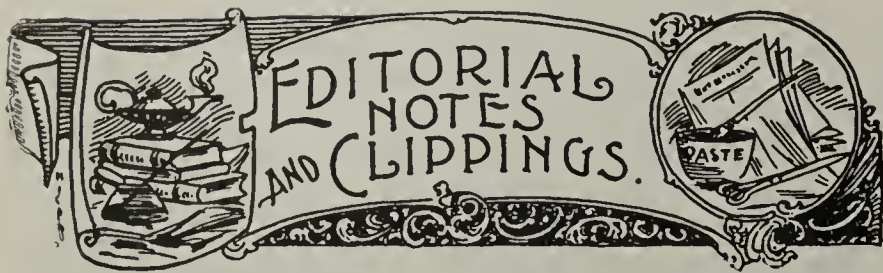
Sheffield Brick & Tile Co.	Mack Mfg. Co.	Dominion Sewer Pipe & Clay Co.
Sheffield, Iowa.	New Cumberland, W. Va.	Swansea, Ontario

And by Many Others whose names you can have on application.

THE HADFIELD-PENFIELD STEEL CO.

Bucyrus, Ohio. Formerly The American Clay Machinery Co.





U. M. Grider, of Columbia, Ky., writes he is starting a small brickmaking plant at that place.

The Rolmer Company of Chicago intends to establish a plant at Waycross, Ga., for the manufacture of composition brick that will be fireproof.

M. J. Stone, of the Bloomsburg (Pa.) Brick Co., becomes general manager of the company, succeeding the late Mr. Mears whose death we noted last month.

The Hoover Clay Products Company of Mineral City, Ohio, has been incorporated by Frank E. Baker, Lex Kintner, L. E. Giel, M. B. Pennell and Augustus W. Bell.

The Independent Shope Brick Company has been incorporated at Waco, Tex., by B. W. Willig, G. V. Willig and George Willig with a capital stock of \$60,000.

The McGraw Brick Company, Gaffney, S. C., will install machinery at once for the manufacture of Denison style of interlocking building tile. The daily capacity will be 125 tons.

The Greenwich Clay Products Co., Greenwich, Ohio, has been incorporated with \$25,000 capital stock. W. H. Noble, Charles McLaughlin, K. C. Jenney, C. A. Ingersoll and F. H. Tenney are interested.

Two men were killed and six others painfully injured when a brick arch in a huge brick kiln under construction at the plant of the General Ceramic Company at Metuchen, N. J., collapsed without warning burying a number of workmen in the ruins.

The Smyrna Brick & Tile Company has its plant at Smyrna, Tenn., in full operation, and will fire the first kiln of brick before the month is over. W. B. Coleman, S. T. Brackin, Dr. W. B. Gracey, J. J. and R. T. Batey and others are interested in the new concern.

Norwood Pottery Company, Cincinnati, Ohio, has secured a charter with a capital of \$35,000. The incorporators are Wm. J. Mahoney, Anna Mahoney, Geo. L. Haldy, Lillian A. Smith and Martha A. Juehling. The plan of the new company is to erect a modern plant at once.

The Huseman Brick Yard at Pittsfield, Ill., has been discontinued and it means the retirement of one of the pioneer firms of the city. Pittsfield and vicinity have had brick yards for 80 years, practically all of the buildings of Pittsfield having in them brick that were manufactured in the home town.

The state brick plant at the Federal Prison, Leavenworth, Kan., has started earlier than usual this season, with more orders for brick than ever before, according to Warden M. F. Amrine. The state plant has orders for 4,000,000 brick this year, 1,000,000 of which are for state institutions which plan new buildings.

L. Perry West, manager of West Brothers Brick Company, Washington, D. C., announces that his company will electrify their plant, doing away with boilers, engines, etc., and incidentally saving money. They are now installing a new Thew electric shovel. His company has orders on hand to keep them going for a long time to come.

At the recent annual meeting of the stockholders of the Savage Mountain Fire Brick Company, Frostburg, Md., the directors were re-elected, with the addition of their Sales-manager, Clarence Overend, who was elected to fill the place made vacant by the death of Mr. Gorsuch. At the directors' meeting, which followed immediately after the stockholders' meeting, John A. Caldwell, president, was re-elected, together with all of the other officers.

The Swan Lake Brick Company, Hibbing Minn., is preparing for a busy season this summer. The plant at Pengilly will employ a crew of 35 men, and operations are expected to be started within two weeks. According to the management the factory has orders ahead which will require 3,000,000 brick. Some of the recent orders are the city hall job in Hibbing; Cohasset grade school (80,000 brick); Northern public school

(45,000) brick). The office of the company is located at Hibbing.

The Holston Tile Company of Rogersville, Tenn., has increased its capital stock from \$35,000 to \$100,000.

J. L. Jones has ordered the equipment necessary for the establishment of a brick plant in Greenback, Tenn., with a capacity of 30,000 bricks a day.

New Brick and Tile Company of Easton, Md., has been capitalized at \$50,000 and has purchased thirty acres of land. Work of erecting buildings will begin about June 1.

The Coal Grove Brick and Tile Company of Huntington, W. Va., composed of West Virginians, has purchased the brick plant of The Deegan Brick and Tile Company at Coal Grove, Ohio.

After an idleness of three years the plant of the United Brick Company at Conneaut, Ohio, is again being operated, and when in full swing will turn out 50,000 brick a day. H. H. Smith is general manager of the plant.

John H. Miller, treasurer and manager of the Washington Brick & Terra Cotta Company, Washington, D. C., writes they are very busy. In fact, have about all they can do. Brick in Washington are selling for \$19.00 a thousand.

The Orlando Potteries, which were recently incorporated at Orlando, Fla., and of which N. P. Powell is president, will erect a mill building and install kiln and pottery machinery at a cost of \$10,000. The contract is to be let at once.

The R. L. Winslow Company, Inc., manufacturers of paving brick, announce the removal of their offices to the Liggett Building, 41 East 42nd street, corner of Madison avenue and 42nd street, New York City. Visiting brickmakers will always find a welcome.

The Model Brick Company of Dallas, Tex., of which Fritz Aebi is president, will erect a plant at Houston with a capacity of 12,000 bricks daily. Construction work will be started soon and the company is now looking around for modern machinery to place in the plant.

The Goodwyn Crockery Company, Union Avenue, Memphis, Tenn., was badly damaged by fire April 26 which started during a heavy rain storm and was fought for two or three hours before fully extinguished. The basement storage floor contents suffered greatly. Loss about \$35,000.

The Christy Fire Brick Company of St. Louis, Mo., has filed incorporation papers at Jefferson City, showing a capital stock of \$2,000. The company will mine, manufacture and deal in fire clays, brick, tiles, pipes and other minerals. The shareholders are C. M. Christy, M. A. Christy and L. W. Christy.

The Ashland (Ky.) Fire Brick Company has let a contract for the erection of a plant there with a daily capacity of 50,000 brick. The building will be erected by Paul Meehan or Iron-ton, O., and Runyon Brothers of Ashland. Machinery for the new plant has been purchased and operations should be under way by early fall.

The Kentucky Refractories Corporation of Russell, Ky., has acquired a tract of 17 acres and will establish a plant to manufacture from 75,000 to 100,000 clay units daily. These will include building brick, fire brick, furnace linings and the like. The cost of the plant and the modern machinery that will be installed will be in the neighborhood of \$325,000.

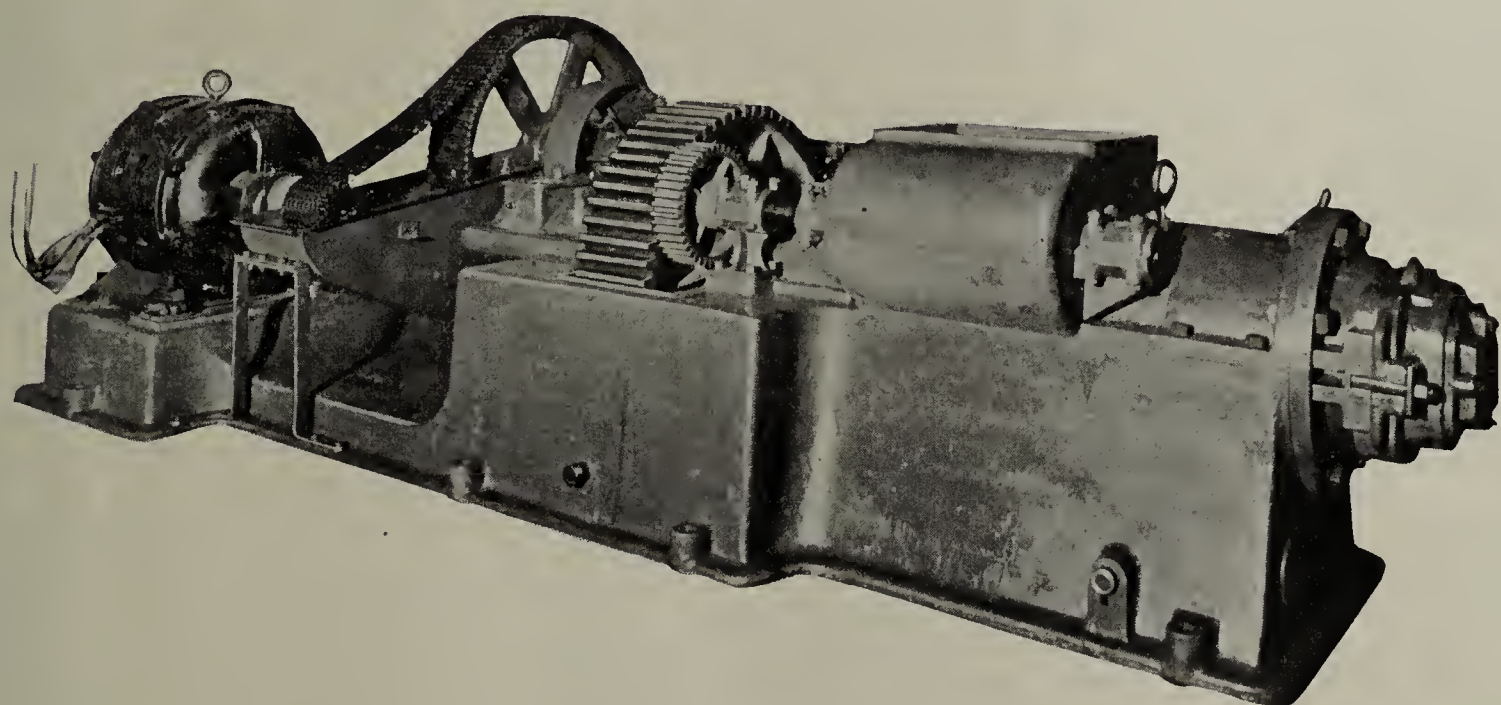
The Tucson Pressed Brick Co., of Tucson, Ariz., is installing new machinery and otherwise improving its plant with a view of very materially increasing the capacity of same. They will manufacture hollow tile as well as brick. A. H. Gardner, formerly identified with the Los Angeles Pressed Brick Company is superintendent of the plant, having assumed that position the first of the year.

The Fort Collins Brick Manufacturers & Builders Association of Fort Collins, Colo., was recently organized. The officers of the organization are W. L. Davidson, president, and Harry G. Finley, secretary. It is not the aim of the Association to establish prices nor to monopolize business, but in a legitimate manner to promote the use of brick as a building material and to demonstrate the superiority of such for use in constructive home-building advantages of a brick structure over a frame one and that the original cost difference is not so much higher as is generally supposed by those who have not investigated the facts in the case.

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The one piece base on all three machines allows the setting of the motor on an extension cast integral with the base of the machine (above photograph). All alignment of silent chains or connecting gears, clutch and motor is thus made at the factory; the clay plant operator slushes in the machine on its foundation, connects the wiring and the machine is ready for business and forever is in alignment.

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Editor the Clayworker:-

BRICK AND BUILDING NEWS OF EVANSVILLE AND
SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and southern Indiana are looking up all right and building permits for May have exceeded those issued during the months of April and March. There is quite a good deal of building going on and more is being planned for the coming summer months. The brick manufacturers and contractors of Evansville report that the outlook at present is much better than it was at this time last year. General business conditions have improved and collections are much better than at the beginning of the present year.

The brick plants in Evansville and vicinity are working on better time now and some of the manufacturers report they have enough business on hand now to keep their plants in operation for several months to come. The building outlook gets better every day. There are practically no labor disputes in building trades in this part of the state and the wage scale paid bricklayers, hod carriers and carpenters in most instances is about what it was last year.

There is a good deal of residence building going on in Evansville right now and much more is being planned for the coming summer and fall months. More brick residences are being built than for several seasons past. In many of the towns in this part of the state indications point to the largest building program in many years past. Brick manufacturers say that the outlook is certainly encouraging and that they believe they will have about all they can do for the next six or eight months. The brick yards in the vicinity of Evansville in most instances are being operated on time.

A number of brick school houses and churches have been planned for southern Indiana, southern Illinois and western and northern Kentucky during the coming summer that will represent the expenditure of several hundred thousand dollars.

In some of the counties in southern Indiana brick has been specified as the material to be used in the building of several roads, and this line of work is causing the brick manufacturers to sit up and take notice.

The Standard Brick and Manufacturing Company of Evansville reports it has quite a number of jobs in the city as well as in towns in the tri-state section.

Announcement was made a few days ago that a part of the Evansville and French Lick market highway will be finished this year. The road from Evansville to Boonville was finished last year. This will be good news to the manufacturers, brick men and other building material men of this

section. Announcement was also made that the Indiana State Highway Commission will start work on the bridge across White river at Hazleton, Ind., thirty miles north of Evansville, this year. This structure will cost over \$500,000 and it ought to be completed by early next year. The building of the bridge will connect an important gap in the Dixie Bee Line highway that runs from Danville, Ill., to Adams, Tenn., where the road connects with the big Dixie highway.

The "Build With Brick" Campaign in Evansville has brought forth good results, according to Fred Zahn, president of the Evansville Bricklayers' Union, who was the sponsor for the campaign. He had the co-operation of the union bricklayers of the city as well as the brick manufacturers.

L. A. Folsom, brick manufacturer at Boonville, Ind., stated the other day that the brick manufacturers of that city are looking for a very busy season; in fact they expect their trade this year will show a big increase over that of last year.

The Chamber of Commerce at Evansville has named a traffic manager upon the recommendation of Henry C. Kley-meyer, president of that body and also president of the Standard Brick Manufacturing Company. The brick manufacturers of Evansville co-operated in this matter. They say that one of the crying needs of Evansville for the past two years was the appointment of a traffic manager to handle the claims of the various manufacturers of that city.

Clarence Schutz, president of the Best Brick Company at Evansville, has returned from a business trip to Indianapolis. Mr. Schutz reports he finds the business outlook in the state for brick manufacturers very good.

Aaron M. Weil, connected with two of the largest potteries in Evansville, has been seriously ill at his rooms in the New Vendome hotel at Evansville for some time.

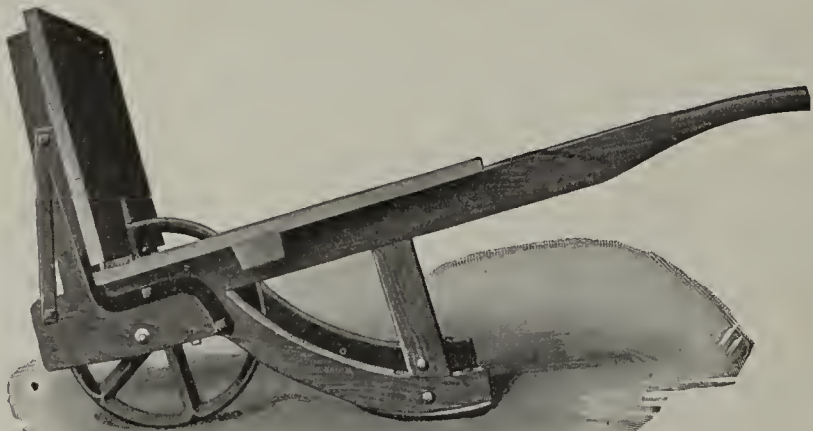
Michael D. Helfrich, pottery manufacturer at Evansville, has sold a large tract of land near Mesker Park, that city, to the City of Evansville, and the same will be used for park purposes. It is the purpose of the city administration to build a large viaduct from the West Side leading into the park and it is probable that brick will be used in the building of the viaduct. The park with viaduct and improvements will cost in the neighborhood of \$300,000.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Company at Evansville, who is also a member of the city water works board of that city, will assist in selling of \$400,000 city water works bonds early in May. It is expected the Evansville banks will buy the bonds.

All of the pottery plants at Evansville are being operated on fair time.

Tile factories in many of the towns of southern Indiana, southern Illinois and western and northern Kentucky report that the trade outlook for the coming season is the best that it has been in a number of years.

A HOOSIER.



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STEVENSON

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Written for THE CLAY-WORKER.

WITH CINCINNATI BRICK AND BUILDING MEN.



EMPLOYERS AND THE bricklayers' union of Cincinnati are still operating under an old agreement which expired April 30, calling for a wage scale of \$1.25 per hour and negotiations so far have failed to result in a new agreement being signed.

This fact, apparently, is the most important in the brick situation in Cincinnati at the present time. So far as work is concerned, employers are practically a unit in saying that this season will see more construction work under way than for any year since 1914. Some concerns have already done more work this year than they did during the whole of last year and the season really has not yet fully begun.

When the old agreement with the men expired, they agreed to work at the old scale pending the settlement of a new scale. The employers believe the scale should be reduced in accordance with the reductions that are being made in other lines but the unions object to any lowering. The employers failing to secure an agreement with the unions want the matter submitted to an arbitration board but the unions have not expressed any enthusiasm over that suggestion.

It is probable that it will take some time to adjust the wage scale. As one employer expressed it "the brick men cannot afford to have a strike with their employes," but still they would like to have the wage lowered. There are reports that some brick employers in the outlying sections of the city are paying over the old scale as high as \$1.35 and \$1.40 an hour. This fact of course will complicate efforts to reduce the wage scale.

The remarkable building record during the month of March has led some brick men to fear that there will be a shortage of skilled men later in the season. The report of the building commissioner shows that during the first four months of this year, the construction was approximately \$2,500,000 greater than for the corresponding period last year and \$3,700,000 more than for the same period of 1920.

The permits issued during March show that while the total number of brick houses is less than for frame, the more expensive and larger structures are for brick. The figures give 98 brick houses to cost a total of \$706,300 and 120 for frame houses at a cost of \$634,200.

John Jewell, formerly in the brick contracting business, has formed a partnership with Elmer P. Jewell, under the name of Jewell and Horne, builders. They now have fourteen houses under construction and have moved their offices to 208 Fourth National Bank Building.

While official announcement has not yet been made, it is understood that the Building Owners' and Managers' Association, composed of the principal property owners of Cincinnati, will go on record soon as opposed to the further use of wood block in the construction of streets in this city. The members believe wood block in the business district to be expensive and undesirable.

An advisory board is being formed in this city to solve problems arising in the building trades and industry. The board will be composed of representatives of the Chamber of Commerce, of engineers and other professions and trades affiliated with the building industry. Problems regarding labor, wages and other phases of the building industry will be taken up by the board for consideration as soon as it is fully organized.

Widespread interest continues to be shown in the model town, to be known as Mariemont, which will be built on a site of 360 acres of farmland, southeast of Madisonville by Mrs. Mary Emery. The town will be built primarily for working people who will be enabled to buy or rent a house on reasonable terms. About 1,000 houses will be built, all of them of brick or other permanent material. The landscape architect is now developing plans for the settlement and it is expected that the first house will be completed before the end of the year. The cost of the residences alone will amount to \$4,000,000. There will be a number of noteworthy features about the project. It is planned to have six or seven houses to the acre so that the families can do truck gardening, if they wish.

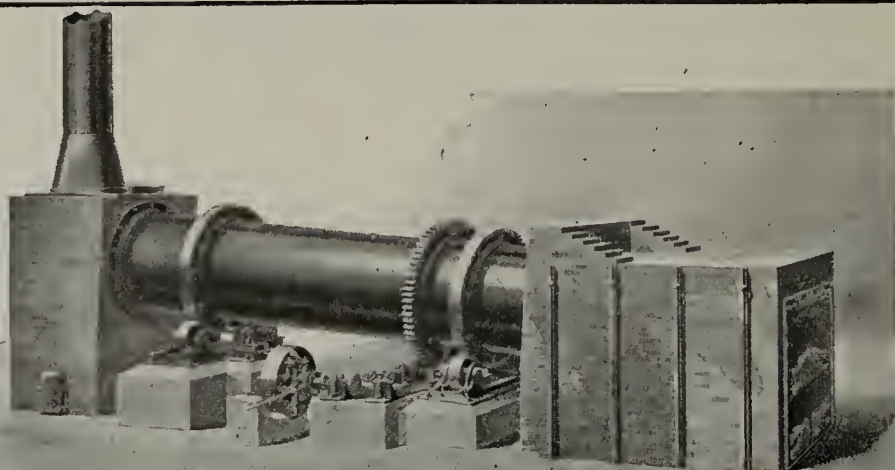
A new factor in the building and industrial development of Cincinnati is the Ferro Realty Company, for which incorporation papers calling for a capitalization of \$1,000,000, are being prepared. The object of the concerns, according to William P. Anderson, one of the officers, is to place building capital at the disposal of deserving firms. It is possible that the first construction activity of the company will be the erection of a warehouse on Third street. Mr. Anderson says the firm will make a specialty of financing the construction of industrial and business buildings in the local market for the benefit of firms requiring larger and more modern quarters.

The Evans Builders Company, West Fourth street and Elm street, has received word that two of the plants in which it is interested have entirely sold out their output for the next two months. The officers of the company say that so far no advance in price has been made in brick, notwithstanding the great demand and brisk business, but that an advance may be expected if the coal strike is prolonged to a great extent.

Cincinnati may soon have another government structure to house the overflow of clerks and employes of the present Federal building. It is estimated that Uncle Sam is paying \$60,000 rent a year for outside offices in Cincinnati. The plan is to erect a building costing \$300,000 on the site of the Public Health building at Third and Kilgour streets.

The Leibold-Farrell Building Company will construct a ten-story semi-office building at Sixth street and Bowen alley for L. B. Reakirt. The cost of the building will be \$350,000.

CINCY.



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We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

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U. S. Brick Co.	Tell City, Ind.
Huntingburg Pressed Brick Co.	Huntingburg, Ind.
Standard Brick Mfg. Co.	Evansville, Ind.
The Best Brick Co.	Evansville, Ind.
Kalamazoo Clay Co.	Carbon, Ind.

You will find them near together, and many more if you want in other locations.

THE MANUFACTURERS EQUIPMENT CO.
DAYTON, OHIO, U.S.A.

Written for THE CLAY-WORKER.

LOUISVILLE BRICK NEWS.

THESE is something of a building boom on in Louisville these days and as a result local brick plants and the local dealer agents for other brick plants are fairly busy and everything looks bright. So far the demand for brick seems to be better than that for hollow building tile but the outlook is good all around.

T. Bishop, of the Southern Brick and Tile Co., seems to have had quite a run on drain tile as they had to buy some stock from down in the state to fill his orders for 4-inch drain tile. The demand for brick is getting under way very nicely.

The Coral Ridge Clay Products Co. report that they are very busy on brick but are not particularly busy on hollow tile. They have been developing some beautiful polychrome rough texture at this plant lately that is one of the finest things found anywhere in face brick. It includes shades from a bright red to a green chocolate, sometimes all on the same brick face and it makes a very striking appearance. J. T. Howington, manager of this concern, has moved his downtown office into larger quarters on the nineteenth floor of the Intersouthern Building, where they have more room and a better arrangement generally of the office equipment.

W. E. Whaley, brick agent, in the Todd Bldg., has demonstrated his hustling qualities lately by landing the face brick order for the new Belknap building being erected on the site of the Old Galt House. This order calls for red face brick to match those in other office and warehouse buildings nearby

of the same company, and the order calls for about 800,000 brick. Whaley also has the order for some apartments of Joseph and Joseph and another important building or two which brings the total of recent orders well above the million mark.

The R. B. Tyler Co. has been refitting its big display and sample room on 4th street lately and adding some new lines as well as improving the setting generally. Among the new features noticed in their display is some of the Fisk-lock material, which is put up in the show window so as to show the interlocking structural features of this brick block and it has attracted considerable attention. Speaking of trade conditions, this concern reports a very good demand for brick with prospects that the season as a whole will be a busy one.

THE COLONEL.

BUILDING CODE WORK.

The Building Code Committee of the Department of Commerce at Washington has issued in mimeograph form a preliminary report consisting of 135 pages on recommendations for requirements in small house construction. This is a sort of preliminary step to standardizing practices in the construction world and it is a work of such importance that it should have earnest attention by those interested in developing uniform codes and practices in building operations, especially for the construction of the smaller homes which are not clearly specified in what building codes we have. The work includes a review of different materials of construction with suggestions as to specifications as to quantity to use and manner of using. And in order that it may be fair as well as good and reliable, all those interested are asked to study the report and make suggestions and recommendations where they think changes are needed.

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

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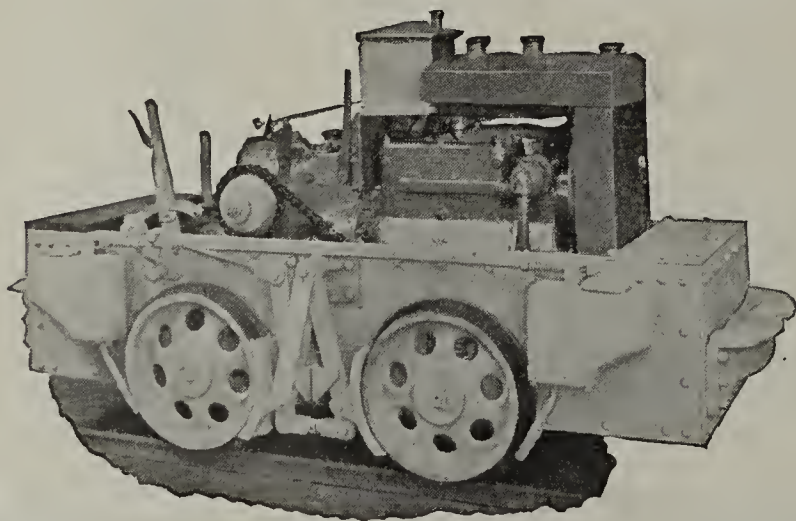


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AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be with out it."

Put your Haulage Problem up to us.

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MANUFACTURERS

CLEVELAND, OHIO

THE CLAY-WORKER

THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 77

INDIANAPOLIS, JUNE, 1922.

No. 7

BRICK BUILDINGS AND BRONZE TABLETS

A Happy Combination at the City of Brotherly Love, the Cradle of American Independence and Brickmaking. Interesting Examples of Early American Brick Architecture: A novel plan recently adopted by the brick manufacturers of that city to encourage more similar construction.

THERE WAS AN interesting meeting of brickmakers and architects in Philadelphia recently which was the occasion for an instructive address by Carl A. Ziegler, A. I. A., an architect of national reputation. In introducing the speaker of the day, Mr. Joseph P. Byrne, secretary of the Philadelphia Brick Manufacturers' Association, said:

"Out of all the data concerning Philadelphia's place in history and among the thousands of valuable and interesting facts connected with the development and growth of this city in its early days, probably by far the most interesting to the members of the Associations gathered here and to many others also, is that relating to the use of brick.

"In order that you may appreciate the extent to which clay has entered into the growth of our city as expressed in its architectural and historic monuments, let me mention the following as but a few of our finest colonial buildings.

"The William Penn House, now standing in Fairmount Park, was erected for William Penn before he landed

in the year 1682, and stood on Letitia Street below Market.

"In 1700 Old Swedes' Church was built and was then deemed a great edifice. This was followed by many others of common brick, among which were, Stenton, the home of James Logan, 1727, at one time the headquarters of George Washington; Independence Hall or the State House begun in 1729 and completed in 1734, at a cost of £5600, the bricks costing 31-s; 8-d per thousand and the laying 10-s; 6-d.

"At the time that the State House was in course of construction, Christ Church, another famous landmark of American History, was erected in 1731.

"During the second half of the 18th Century many other notable buildings of brick were completed in this vicinity, among the examples being the Pennsylvania Hospital, 1775; Woodford, now used as Woodford Guard House, in Fairmount Park, 1756; the Powell House, 1762; Carpenters' Hall, built sometime previous to 1774; the Robert Morris House on South Eighth Street, 1786; and the Wharton House, 1796.



Congress Hall, Philadelphia, Built in 1789, Where George Washington Was Inaugurated for His Second Term.

"The Friends' Meeting House at Fifth and Arch Streets, was built in 1804, and is today one of the most prominent examples of brick architecture in the city, with its brick wall surrounding the graveyard in which lie the remains of the immortal Benjamin Franklin.

"These are only a few of the notable examples of the use of brick in the early days of Philadelphia, but they furnish a clear idea of the extent to which this material has entered into our history."

Announcement was then made by Mr. Charles B. Siner, president, that the Philadelphia Brick Manufacturers' Association would award bronze tablets for best brick buildings erected in Philadelphia in 1922.

A letter announcing these awards has just been sent to



Christ Church, Philadelphia, Built in 1727. Over the Padian Window on the Front, There Still Remains the Bust of George III.

the architects, engineers and constructors of Philadelphia from which the following is quoted:

May 22, 1922.

To the Architects, Engineers and Constructors of

Philadelphia:

Gentlemen:

The Philadelphia Brick Manufacturers' Association is pleased to make the following

ANNOUNCEMENT:

At the end of this year the Association will award four bronze tablets for those four buildings in Philadelphia and its suburbs which are selected by the Committee of Award as being those in which, in the opinion of the Committee, the most appropriate and attractive use has been made of brick produced in Philadelphia.

The awards will be as follows:

One tablet in triplicate to the Architect, the Builder and the Owner of a private residence costing less than approximately \$10,000.

One tablet in triplicate to the Architect, the Builder and

the Owner of a private residence costing over approximately \$20,000.

One tablet in duplicate to the Designer and the Builder of an "Operation" house.

One tablet in triplicate to the Architect, the Builder and the Owner of an industrial building.

The tablets will be suitably designed and each will bear the name of the recipient.

It is hoped that the award of these tablets will encourage Architects, Engineers and Constructors of this City to investigate and become more generally familiar with the characteristics of Philadelphia made bricks and the artistic effects obtainable through their use.

It is the further hope of the local brick industry that a better understanding and co-operation in the production of this splendid local material may, through its more extensive and appropriate use, widen the reputation of Philadelphia and its suburbs as a City of Homes.

Messrs. Albert Kelsey, F. A. I. A.; Carl A. Ziegler, F. A. I. A., and D. Knickerbacker Boyd, F. A. I. A., Chairman, have consented to act as a Committee, or Jury, which will at the end of the year make the awards for buildings completed since January, 1922.

It will afford the Philadelphia Brick Manufacturers' Association much pleasure to receive comments or suggestions from Architects and others concerning the possibilities of production and utilization of local brick and any inquiries regarding this subject should be addressed to the undersigned with the assurance that the Association and the Committee will gladly co-operate in any way possible in the furtherance of this program. For further particulars address the Philadelphia Brick Manufacturers' Association.

Joseph T. Byrne, Secretary.

Early American Brickmaking.

Architect Ziegler prefaced his address on "Early American Brickmaking" by a complimentary reference to the brick manufacturers of Philadelphia and adjacent territory, remarking that Philadelphia more than any other city in the country has been influenced in its building and construction work by the examples of the colonial types, which predominated during the early life of the city. No other city has so many excellent examples of the colonial types of architecture. That is why Philadelphia was known as "The Brick City" in the early days when it was the metropolis of the colonists. A splendid book on the subject, under the title of "The Red City" was written by the late Dr. S. Weir Mitchell.

In his address Mr. Ziegler said in part:

"Unfortunately few Americans realize what a heritage they have in the old brick buildings of this country.

If you have ever made a pilgrimage in search of old Colonial brick buildings you have probably observed that the first fact the "old inhabitant" attempts to impress you with is that the "bricks were all brought from England."

Most of these imported bricks belong in the same category as the furniture which is reputed to have come over in the Mayflower; some came, of course, but it is appalling to think of what a fleet would have been necessary to bring over all that is said to have been imported, to say nothing of the expense. Ships were few and small and the demand for the very necessities of life was great. It is incredible, therefore, that any great quantity of brick could have been imported in those early days.

To test these oft-reiterated statements I have searched the early records and thought you might be interested to know just when bricks were first made in this country. The search has brought out many interesting facts and if our forefathers imported bricks from Europe up to the time of the Revolutionary War and after, as has been said, they were not the

thrifty business men that we are accustomed to consider them.

Early Brickmaking in New England.

The first brick kiln in New England was erected in Salem, Mass., in 1629. The minister at Salem during July of that year wrote "It is thought here is good clay to make Bricke and Tyles. At this instant we are setting up a brick kill to make bricke for the building of our houses."

Gawan Laurie of East New Jersey writes in 1684 "The poorer classes of houses are quite primitive in style, trees

and Delaware were very crude and chiefly of wood, one story in height with a single room with a low entrance door and crude windows that were merely openings in the walls, later to be covered with oiled paper in lieu of glass. They were of the type common in Northern Europe for a century or two previous. On Timicum Island and Christiana Creek they built strong rude forts of hemlock and hickory logs. They built a brick house at Wicaco in 1700 which still stands. Better dwellings were erected by their successors and neighbors, the Dutch, who brought bricks from New Netherlands for the pur-



Detail of Lower Portion of Independence Hall, Philadelphia.

were split and set up with one end in the ground and the other nailed to the 'Rising.' They were covered with shingles and plastered within. Barns were built in the same way and the cost of these was about £5. Some used Pantiles in the Dutch manner. We have good brick earth and stone for building at Amboy and elsewhere. The country farm houses they build very cheaply, a carpenter with the Owner's own servants build the houses, they have all the material for nothing, save the nails."

The first dwellings erected by the Swedes in Pennsylvania

pose. At New Amstel (New Castle), Delaware, bricks were made in 1656. (Wm. Penn landed in New Castle, October 27th, 1682.)

Although the first English settlers in Pennsylvania were compelled to find lodging under the friendly trees and in caves or huts (John Key, the first child born of English parents in Philadelphia having been born in a cave in the bank near Race Street) they were shortly in possession of substantial brick houses. One writer states "Far out Market Street at Center Square embosomed in the Forest was erected in 1684

the First Friends' Meeting House, a large plain brick building." The present City Hall now stands on this site at the intersection of Broad and Market Streets.

William Penn's instruction to his agent in 1684 was to build principally of bricks "for which end I have sent a person qualified to make them."

Clay, sand and gravel were abundant within the city and fuel abounded on the banks of the Delaware and Schuylkill Rivers.

The Mooted Question of Imported Brick.

It is probable that some of the early houses, of which Philadelphia contained in 1684 over three hundred, were built of imported bricks, but Pasterius who founded Germantown in 1685 records that "they had sufficient number of mills, brick kilns, and tile ovens for all purposes." Four-fifths of the buildings in Philadelphia at the close of the eighteenth century were of brick and the city had at that early date a high reputation for the manufacturing of brick.

Christ Church on Second Street, south of Market Street, was built in 1727, but there was a church upon this site as early as 1695.

This church, which was the most important church building in Philadelphia in the Colonial days, is a splendid specimen of Colonial architecture and quite equal to any edifice that has been erected in Philadelphia up to the present day. Like all the important churches within the city this structure is substantially built of brick in the old manner that creates such a distinctive atmosphere of refinement and restraint. There has been much debate among antiquaries as to whether the brick were imported from England or not. There are records in the archives of the parish showing that bricks were delivered by "sailing vessel" to Philadelphia for the structure erected in 1685, but whether the vessel came from England or from another of the Colonies, or possibly from New Castle on the Delaware only a few miles below Philadelphia where brick were made in 1656, is not stated. The 1727 structure was erected under the direction of Dr. John Kearsley and although no plans are now in existence, drawings were no doubt prepared by him. In 1746 a competition seemed to have been held in order to secure a design for the spire, (possibly the first architectural competition in America), in any event the Vestry decided in June, 1746, that "in erecting the spire the draft which Mr. Harrison drew should be followed."

St. Peter's Church on Pine Street between Third and Fourth Streets was started in 1758. Dr. John Kearsley (the same who had in charge the building of Christ Church) and six others drew up a plan that was approved by the Vestry and the work was dedicated in 1761. Old St. Peter's with its grounds covering almost an entire city square, enclosed by a brick wall whose gateways have become a tradition in the architectural profession, stands as a monument to those sturdy straight thinking men to whose efforts we owe the "Red City" of Pennsylvania.

Gloria Dei commonly known as Old Swedes Church at Water and Christian Streets was erected in 1698. The selection of the site was long delayed by a disagreement. One faction wanted it built at Passayunk (now Point Breeze) while others wanted it erected at Wicaco, about half a mile below what was then the southern boundary of the city. Finally at a congregational meeting on May 17, 1698, the matter was settled by writing the names of both places on separate pieces of paper and placing them in a hat. After tossing them around they were thrown upon the floor and the one bearing the word Wicaco landing face upward, the matter was settled.

This is the earliest brick church in Philadelphia and was built to replace the old block house built upon the site in 1665 in which the Swedes were accustomed to worship. Although smaller than Christ Church or St. Peter's it is a fine

old example of Colonial architecture and quite Pre-Georgian in its style.

Independence Hall.

The most important early brick structure in Philadelphia is Independence Hall well named the "Cradle of Liberty." The events which occurred within its walls have stirred the imagination of the world. The large central building of this group was designed by Andrew Hamilton, a lawyer; the land was purchased in 1730 and Andrew Hamilton, Dr. John Kearsley and Thomas Lawrence were appointed to supervise the construction of the building. Many delays occurred and in October, 1736, when the Legislature sat in the east room on the first floor the windows were still unglazed. The tower was built in 1750, but the steeple was not erected until 1753.

Independence Hall has unfortunately undergone many changes and has been used for a variety of purposes. For a time it was rented to Charles Wilson Peale, the artist, and used by him as a museum. Later it was used by the City Councils.

The building was sadly neglected for many years and unfortunately when it was restored the Chamber in which the Declaration of Independence was signed was not restored to its original condition. The first floor of the building and the stair hall are pleasing in design, but it is nevertheless to be regretted that we are not able to visualize the interior of this historic building as it existed in 1776.

The westernmost building of the Independence Hall group known as "Congress Hall" was originally intended as the County Building. It was completed in 1789 and Congress first sat in it on December 6, 1790, when the National Capitol was removed from New York to Philadelphia. Congress occupied this building until May, 1800, when they moved to Washington, D. C. The building was restored by a Committee appointed by the Philadelphia Chapter A. I. A. in 1913 and has since been used as a permanent museum for the exhibition of antiquities of the Colonial Period.

Convict Labor Built Jail.

The old jail was located at Sixth and Walnut Streets, just in back of Congress Hall and convict labor was used in constructing the latter building. From the quaintly worded records we learn that human nature has not changed much since the early days, for the convict laborers were in the habit of lifting the iron ball and chain by which they were shackled and dropping same into the mud on the passing of some of the silk-stockinged gentry out on promenade, which fact seriously disturbed the city fathers and brought many threats of suit for damages.

At the eastern end of the group is the First City Hall, possessed by Philadelphia; it was built in 1790. Although originally intended for city offices, it was necessary to tender a portion of it to the United States Supreme Court, when the Federal Government was moved to Philadelphia in 1790. The Supreme Court held its first session in the building on February 7, 1791. The Supreme Court of the State of Pennsylvania also sat in the building and subsequently it was occupied by the City Councils.

When we read in the early history of the Colonies that smoking was prohibited within the city limits in certain provinces and travelers were prohibited from smoking but once in a ten mile journey in others, we are inclined to attribute puritanic instincts to our staid and sober forebears but certainly they did not taboo the lottery, for the records show that a lottery was instituted to further the erection of this "Towne Hall" in Philadelphia with \$50,000.00 as the aggregate, 20 per cent. of which was to go to the fortunate winner.

At the rear of this interesting group was the "State House Yard" or the "Mall" as it was sometimes called. This contained a serpentine walk and it was the custom of the elite to

promenade thereon upon pleasant afternoons as a mode of recreation. The "Mall" was surrounded by a brick wall with piers at regular intervals, the entire height of which was about 8 feet. The city fathers became apprehensive that the air in the "State House Yard" was not conducive to the public health and after deep deliberation it was deemed desirable to remove the brick wall between the piers and to replace the same with "iron palisades in order that the atmosphere might be made the more salubrious." It is to be hoped that the treatment was efficacious.

Steadfast and true to every belief they held, these sturdy pioneers of the young Republic have left us monuments of government and of art which we of a more hectic generation may well strive with like singleness of purpose to emulate.

Up until 1829 all the bricks used in this country were made by hand, but during that year the manufacturing of brick by machinery was successfully started. In New York the machinery then used made twenty-five thousand bricks per day and they were sold for five dollars (\$5.00) a thousand. The Salamanda Fire Brick Works at Albany, New York, was established that year and was so successful as to stop the importation of fire bricks.

So closely is the making of brick interwoven with the march of human progress that one must go back to the dawn of history to learn of the beginning of the industry. The earliest evidences we have of recorded history are a few manuscripts and inscriptions found in Egypt, dating back about three or four thousand years B. C. Those of Babylonia are scarcely less ancient. Both of these countries owe their prosperity to great rivers which inundated the land enriching it for agricultural pursuits and furnishing also great deposits of clay from which the natives built houses, first of adobe and then of brick. Israel labored long in Egypt as brick-makers as Scripture records. Babylonia, situated as it was between the Tigris and the Euphrates Rivers in the valley called Mesopotamia (The land between the rivers) possessed no forests although the date palm was abundant and with little stone, they early resorted to the expedient of moulding the clay into bricks, which were dried in the sun and from these they built their cities.

Of all the early Babylonian kings the most famous was Hammurabi, who ruled about 2000 B. C. He it was who formulated the oldest code of laws of which we have any record, but long before man achieved a legal code he made bricks and from the characters imprinted upon these bricks, marking the dynasty under which they were made, many important dates in history have been verified.

Noble indeed has been the art of brickmaking and human progress owes much to this industry."

Note.—We are indebted to the American Architect for the accompanying illustrations and permission to reprint Architect Ziegler's address. Copyrighted by The Architectural & Building Press, Inc.

CHEMICAL EXPOSITION.

THOSE INTERESTED should bear in mind that the next National Exposition of Chemical Industries is to be held in the Grand Central Palace, New York City, during the week of September 11 to 16, inclusive, following immediately after the meeting of the American Chemical Society. This exposition will furnish a graphic display of progress in the chemical and allied industries, including raw material, machinery and products, and it is hoped to show the final perfecting of many new things that we had started to develop when the war ended. The general outline of the program of the exposition is now being put into shape and those desiring more detailed information should write the National Exposition of Chemical Industries, Grand Central Palace, New York City.

BRICK GOES ON FREE LIST AFTER TWO-DAY RUMPUS IN SENATE — "RETALIATORY PROVISION" AGAINST COUNTRIES TAXING AMERICAN BRICK.

Alfred T. Marks.



BRICK HAS HAD ITS day in Congress—in fact, two days—and the rather bitter debate which developed is conceded to have simmered down to a case of politics, pure and simple. This was in the discussion in the Senate of the brick and clay products schedules in the new tariff bill.

The statement was made by floor leaders on the minority side of the Senate several days prior to the debate on the brick paragraphs that this was to be one of the schedules wherein a real test of strength would be made as between the friends of the Senate Finance Committee draft of the new tariff measure and those who oppose it—and the developments proved that the opposition had their plans well laid.

The paragraph around which the fight raged is as follows, according to the Senate Finance Committee revision of the bill:

"Par. 201. Fire brick weighing not more than 10 pounds each, not glazed, enameled, ornamented or decorated in any manner, 15 per centum ad valorem; glazed, enameled, ornamented or decorated 30 per centum ad valorem; weighing more than 10 pounds each and not specially provided for, not glazed, enameled, ornamented or decorated in any manner, 25 per centum ad valorem; glazed, enameled, ornamented or decorated, 35 per centum ad valorem; magnesite brick, four-tenths of 1 cent per pound and 10 per centum ad valorem; chrome brick, not glazed, enameled, painted, vitrified, ornamented or decorated in any manner, 25 per centum ad valorem; glazed, enameled, painted, vitrified, ornamented or decorated in any manner, 35 per centum ad valorem; bath brick, 35 per centum ad valorem; all brick not specially provided for, 25 per centum ad valorem."

Senator Robinson (Democrat, Arkansas), upon the paragraph being reached, immediately gave notice that Senator Stanley and himself, as well as other senators, "have been waiting for at least a week to take up the brick question," and insisted that, now that it had been reached, it should be "taken up and disposed of." Upon objection of Senator Smoot (Republican, Utah) and Senator Poindexter (Republican, Washington) that its consideration be postponed for a time in order to allow the committee to investigate the proposed duty on magnesite brick, Senator Robinson replied: "I dislike very much to decline to oblige either of the senators. I have risen here during the past week six or eight times and asked to take up the brick paragraph. No reason was ever given me for not proceeding except that the committee had under consideration the question of revising the brick paragraph and were not ready to report on it. I now insist that we proceed."

It thus became evident early in the debate that the minority senators were engaged in an effort to eliminate the duty on brick entirely and to place it on the free list. As a "feeler," for the purpose of bringing out the intentions of the minority senators, Senator Smoot offered to place brick on the free list with a proviso to the effect that "if any country, dependency, province or other subdivision of government imposes a duty on brick imported from the United States an equal duty shall be imposed upon such brick coming into the United States."

Senator Robinson, in objecting to the Smoot proviso, said:

"The paragraph as reported by the Finance Committee segregates brick into as many as nine different classes for the purpose of imposing a tariff.

"The first class is fire brick weighing not more than 10 pounds each, not glazed, enameled, ornamented, or decorated. Upon that class of fire brick the original Finance Committee amendment contemplated a tariff of 15 per cent, the House having imposed a tariff of 10 per cent.

"Upon the second class, according to the Finance Committee's arrangement—glazed, enameled, ornamented, or decorated fire brick—the committee proposed to impose a tariff of 30 per cent in place of 20 per cent as proposed by the House of Representatives.

"The third class embraced brick weighing more than 10 pounds each, and not specially provided for, not glazed, enameled, ornamented, or decorated in any way. The Finance Committee amendment proposed to increase the House rate of 17 per cent to 25 per cent.

"On the fourth classification—glazed, enameled, ornamented, or decorated brick weighing more than 10 pounds each—the Finance Committee amendment contemplated a rate of 35 per cent, increasing the House rate, which was fixed at 20 per cent.

"On magnesite brick, the fifth class, the House proposed a duty of three-fourths of 1 per cent per pound and 10 per cent ad valorem. The Finance Committee proposed to reduce that to four-tenths of 1 cent per pound and 10 per cent ad valorem.

"The next classification, No. 6, related to chrome brick, not glazed, enameled, painted, vitrified, ornamented, or decorated. The Finance Committee amendment proposed to increase the rate from 20 to 25 per cent ad valorem.

"The seventh classification included chrome brick, glazed, enameled, painted, vitrified, ornamented, or decorated in any manner. The Finance Committee amendment proposed to increase the rate from 23 to 35 per cent ad valorem.

"Bath brick constituted the eighth classification, and upon that the House imposed a rate of 23 per cent and the Senate committee proposed to increase it to 35 per cent.

"The remaining classification was brick not specially provided for, which included common brick, 25 per cent ad valorem. It is now proposed by the pending amendment to make a uniform rate of 25 per cent ad valorem on all classes of fire brick except magnesite, upon which the pending amendment proposes to impose a duty of three-fourths of a cent a pound and 10 per cent ad valorem; which is the House rate.

"It is apparent that there is a material reduction in the rates on many of the classes of brick embraced in paragraph 201. In my judgment, however, there is no justification for the imposition of a rate of 25 per cent ad valorem on bath brick, chrome brick, and fire brick not specially provided for.

"Bath brick, the first mentioned in the amendment, is an abrasive, and is used for polishing and cleansing. The importations have never been great. They are negligible, even under existing rates. The present rate is 15 per cent, and there are substantially no importations, and I can not see any reason for increasing the rate on that class of brick.

"The same is true of chrome brick and fire brick. Certainly at this time, when building and structural materials are scarce and when the prices charged for them are exorbitant, there is not justification in sound policy for imposing high rates of duty upon their importation.

"The proposal of the committee to follow this amendment, to place common brick upon the free list subject to a proviso, of course, meets with my approval. I never understood why the committee wanted to tax common brick 75 per cent. There are now substantially no importations. Even along the

Canadian border the importations are very slight, and I do not believe that an embargo can be justified, such as is proposed by the proviso in the second amendment which the senator from North Dakota has stated he will offer if the first is agreed to.

"The Canadian border line is in a sense an imaginary line. For almost the entire distance across the continent no natural barrier separates the United States from Canada. There are some instances, at least, where the interests of the American public along the border ought to permit them to have the opportunity of purchasing brick manufactured in Canada. Canada imposes a rate of 22½ per cent on American brick, and there is an additional charge of about 2½ per cent, which makes the Canadian rate on importations of American brick 25 per cent, and this paragraph placing common brick on the free list really means nothing, accomplishes nothing of interest to those who want to consume brick in the construction of houses in the United States, for the reason that common brick are not imported except in a few localities along the Canadian border, and if this tax is imposed those importations will be discontinued. The purpose of this proviso is to lay an embargo against the importation of all Canadian brick into the United States, and it will have that effect.

"The only effect of it will be to work inconvenience to the people in the United States along the Canadian border who are nearer to Canadian manufacturing plants of brick than they are to American manufacturing plants. They will be compelled by reason of this tax of 25 per cent to buy their brick from American manufacturers, even though it may be much more inconvenient for them to secure delivery, and even though the transportation charges may be somewhat greater than they would be if the brick were purchased from the Canadian manufacturers.

"No such condition exists along the border as to work a great hardship on anyone. I have here the record of the hearings before the Ways and Means Committee of the House, in which I find a letter from Mr. H. S. Wheeler, of Tacoma, Wash., who complained about the importation of Canadian brick; and there was a letter from a member of the House of Representatives from the state of Idaho, who said that the two small brick plants in his district—and I believe he represents the entire state—are in danger of being driven out of business by the importation of large quantities of brick from Scotland and other remote points.

"The Refractories Manufacturers' Association, of New York, filed a brief complaining that they were being injured very seriously by the importation of brick from Scotland and elsewhere in the form of ballast, and there is some testimony in the record to show that small numbers of brick have from time to time come to the Pacific coast as ballast in ships; but the point of the matter is that, taking all of these complaints together, under the existing rates importations of brick of any character are negligible anywhere. There is no danger that the brick manufacturing industry will suffer even if brick were placed on the free list. * * * The Association of Brick Manufacturers control absolutely the sales of brick, the use to which the same may be applied, to whom sales may be effected, and that they have literally fixed the prices at which sales may be made, and that the prices so fixed have been exorbitant beyond all reason.

"There is no claim by anybody that the brick industry in the United States is an infant industry or that it is unprofitable. On the contrary, the price of the output is controlled absolutely in nearly every locality in the United States. In New York City there is not a man engaged in selling of brick, no matter how near he may be to the point of consumption, who will sell his product for any less than any other dealer in New York City. If he does he is boycotted in every imaginable way.

"No man can buy brick in excess of a supply for a certain

number of days, and when a purchase is made the purchaser must certify the purposes for which the brick are to be used, the job on which they are to be used, and if he uses them for any other purpose he can not buy another brick from any dealer in New York City.

"No person or organization not a member of this association can buy material from any member of it. No member who is a manufacturer is permitted to sell any material to any dealer within the jurisdiction of the association unless such dealer is a member of the association. Not only was that true but the dealer who bought brick had to bind himself to purchase other building materials from members of the association, and if he failed to enter into that agreement he could not purchase brick. In other words, if he bought brick from a member of the association he must also buy cement from the same dealer, as well as lime and other products."

Senator Robinson continued by launching a general attack, entirely unsupported by evidence, on the various associations included in the brick-manufacturing industry, claiming that "the brick-making industry is controlled absolutely in all of the larger industrial centers," and that the enactment of the proposed tariff "would perpetuate this evil. Why is it desired to put a tariff, a prohibitive tariff, that makes impossible the importation of any quantity of this necessary

A BRICK PLANT WITH A HISTORY.

A Model for Economy in Production and Efficiency in Every Step Taken from Clay Pit to Finished Article.

THIS IS THE story of plant number one of the Standard Brick Manufacturing Co., Evansville, Ind., of which H. C. Kleymeyer is the head and moving spirit. It is the story of a shale brick plant with a history and a number of other interesting features. There has been a brick plant on this site for probably 40 years though the Standard Brick Manufacturing Co. has owned and operated it now only about 19 years. The first brick yard known at the site of this plant was operated by a lumber concern, and in the course of time this plant has been the scene of practically the whole gamut of variations in brickmaking, including soft mud, semi-stiff mud, dry press, and the stiff mud process. Mr. Kleymeyer says that so far as he can recall, it has never been a hand yard proper, like a lot of the pioneer brick yards, but it was the first steam brick plant or machine brick plant in that part of the country. And at this site has been tried out most of the different machines and processes for making brick from soft mud to dry press. The operations at present consist in making brick at the rate of 60,000 a day by the stiff mud process.



Birdseye View of Plant No. 1 of the Standard Brick Manufacturing Co., Evansville, Ind.

building material for the benefit of a combination that has outraged, robbed and plundered the American people beyond the power of human mind to conceive? It ought to be on the free list. There is no justification for putting a tariff on it."

Senator Stanley (Democrat, Kentucky) followed Senator Robinson in a long speech urging that free entry be given foreign brick "in order to assist in reaching normal conditions in the American building industry."

A bitter discussion followed the Robinson and Stanley speeches, which resulted in further making it plain that the attitude of the minority senators was taken purely for political effect.

Senator Gooding (Republican, Idaho) got into the debate with the statement that "There are two small plants producing brick located in my home county in Idaho, and these plants are in competition with brick produced in Scotland, England and elsewhere, where the wages and conditions are not at all adequate for the American laborer."

Whereupon Senator Robinson replied that "the nature of this commodity is such that it is not possible for serious competition to occur between brick plants in Idaho and brick plants in England and Scotland. Idaho cannot afford to manufacture brick to be sent to the Atlantic coast under any

(Continued on page 704)

The plant and the raw material holdings occupy about 40 acres of ground just outside of Evansville on the west, near the L. & N. railroad. The company built a side track switch from the L. & N. railroad out to the plant to get the direct rail hook-up. It is high, rolling ground, with hills and valleys and the raw material consists of about ten feet of yellow surface clay beneath which is a soft blue shale that extends downward to unknown depths. They are still working in their original opening and at present this shale and clay bank from which they get their raw material stands a little better than 70 feet high looking at it from the working floor occupied by the caterpillar steam shovel which is used for garnering the shale and clay after it has been blasted. This steam shovel and its caterpillar tractor feature had a thorough try-out during the rainy season this spring because notwithstanding the use of a pump and drainage system to keep the pit free from water, there was much mud and slush and at times the tractor was up to its hubs in it. And Mr. Kleymeyer says it proved its merit by going right ahead and making good even through the trying wet and muddy season.

A glance at the pictorial showing of the shale pit with the steam shovel at work, and consideration of the fact that this soft blue shale extends downward to unknown depths impresses one with the fact that on their holdings of 40 acres there is enough raw material in sight to run them several

hundred years even if they increase the capacity of the plant.

The raw material, as stated above, is in the main a soft blue shale. Overlaying it is about ten feet of yellow clay, and they strive to get it all thoroughly mixed so as to have a uniform run or standard raw material to work with. It is garnered as shown by blasting after which a steam shovel dumps it into trucks. A white mule, also shown in the picture, pulls these trucks up to the incline on rails, where a power hoist takes them up to the crushing plant. Here the trucks are dumped directly into a big crusher composed of one single roll and jaws. A rather unique type of crusher which renders excellent service on the soft blue shale. It



Producer Gas Plant Near the Continuous Kiln on the Right.



Round Down Draft Kiln, Producer Gas Fired.

has an oscillating feeding device and figuratively eats it raw.

As the crushed shale drops from the crusher it falls on a big conveyor belt, about 24 inches wide, which carries it up through and out of the crusher plant building into an American ring pulverizer in the main plant building. The majority of material is made ready for the stock room and brick machine by this ring pulverizer. Its work is supplemented by the use of a dry pan into which the tailings from the pulverizer go for further treatment. They are using in connection with these the Hummer electric wire screen and find that they give splendid results.

Looking at the plant from the shale pit or the hill over-

looking it, to the left of the crusher and dry pan equipment is the stock room for the ground clay and shale where it goes on conveyors from the crusher and dry pan and is stored ready for use. From here it again goes on conveyors to the Chambers stiff mud brick machine and pug mill which has a Freese cutter attached.

An interesting feature of this brick machine is in an attachment of their own design for making rough texture brick. This consists essentially of some pieces of heavy board of hardwood lumber through which are inserted pointed steel wires about the size of a sixteen penny nail. These are staggered so as not to interfere with each other and enough of them are arranged in each piece, and each piece is so attached to the machine that the clay columns are properly scored on top and each side as it comes through the die to make a splendid rough texture brick. Out a few feet from the device is a felt covered roll which completes the work of shaping their rough texture face by pressing down the clay that has been plowed up by the scratching of the sharp steel points. The result is a splendid rough texture effect with a simple device which they designed and attached themselves.

From the machine the green brick go through a waste heat drying system designed by the L. E. Rodgers Engineering Co. and thence to the kilns.

The kiln equipment consists of one Haigh continuous kiln



H. C. Kleymeyer, General Manager.

with 40 chambers holding 20,000 each, making a total for the big continuous kiln of 800,000. In addition to this there are five round down draft kilns 32 feet in diameter on the inside and holding from 60,000 to 75,000.

There is an interesting system of underground tunnels for handling the waste heat used for drying in addition to the tunnel system of the continuous kiln. Then a very striking and a somewhat unique feature of this plant is that it is now all motor driven. The boiler and engine equipment, which formerly furnished power, has been discarded entirely and all the machinery equipment is motor driven with current obtained from their public utilities power plant. The motors in the main are handled on the group drive idea, that is coupled to short lines of shafting, each motor serving to drive two or more machines. A plan which they feel makes for satisfaction and lower cost. Not only lower cost in the original installation of individual motors but lower cost in power because their power rate is in a measure apportioned to the motor rating, and the use of individual motors would call for a total horse power rating for the plant probably 50 per cent. higher than that required by the system of group drives used.

The burning temperature ranges from 1,400 to 1,700 in the heart of the kilns, reaching probably as high as 1,000 and 1,900

at the top of the down draft kilns. On the whole the burning temperature of this shale is unusually low and it is a peculiar fact that when the blue shale from the lower depths is used alone it burns at a lower temperature than the surface clay overlaying the shale. The explanation of this is probably that there is enough silica sand in the surface clay to make it call for a little higher temperature. Right here it is perhaps well to point out two interesting and important features about this blue shale raw material. First, it is a very soft blue shale, practically without grit, having more the feel of soap-stone than of a gritty shale. Second, it burns into a solid hard brick at an unusually low temperature for shale, and at a temperature even below that required for most of the surface clays in the western Kentucky and southern Indiana. These make for a favorable situation in the matter of economy in production.

An interesting feature of the Haigh continuous kilns is in the umbrella-like shed extension around the circular end. The kiln is a double one taking on an elongated horse shoe shape and around the end Mr. Kleymeyer conceived the idea of building a wide shed extension of the roof, and the result has proved highly satisfactory. It is on the whole one of the best continuous kilns to be found.

This big continuous kiln is used for the economical quantity production of common brick, and Mr. Kleymeyer esti-

the more common practice is to have two men, one to toss up and the other to catch.

The same idea is carried out in connection with their motor trucks. They not only have a metal dump body as a part of the motor truck equipment but it is made with drop sides also. So as to simplify and make easier and more efficient the loading in of brick. That is the way it is all about the plant. There is evidence that thoughtful attention has been given to eliminating the burden of physical work, and



Brick Plant as Seen From the Clay Pit.



Seventy-foot Shale Pit of Standard Brick Mfg. Co.



Side View of Stock Yard and Plant.

mates that the production cost for this brick is only about 60 per cent. of the production cost for face brick in the down draft kilns which are themselves very modern and on a highly efficient basis.

The continuous kiln is direct fired with coal, but the five round down draft kilns are now equipped with the Underwood producer gas system, by the Manufacturers' Equipment Co. The producer gas plant is a splendidly equipped one and is adjoining their railway siding, which makes for convenience in receiving coal. They have as part of the plant a coal elevator system extending down into a pit where coal cars are dumped, and this supplies not only the gas producer plant, but it is also equipped with hoppers from which is drawn coal for the continuous kiln and for other uses around the plant.

One of the interesting features to the observant visitor about this shale brick plant of the Standard Brick Manufacturing Co. is in that they have not only sought for modern equipment and efficient methods in garnering their shale, preparing it and burning their brick, but they have also added a good order of efficiency in many of the simpler details ing the burden of brick handling but by a wise manipulation around the plant. One sees not only gravity conveyor lighten- of these and of the sideboards on the yard carts and wagons one man is commonly found loading his own wagon, whereas

to following modern and improved ideas in the simpler details as well as in the more complicated work of manufacturing, drying and burning brick.

Not only has Mr. Kleymeyer and his co-workers shown always a keen interest in the securing of efficiency in production and the following of modern ideas as to equipment, but it is a sort of hobby with Mr. Kleymeyer to find as keen a pleasure in improving his product as in reducing the cost of



John Andres, Secretary-Treasurer.

manufacture. The product of the Standard Brick Manufacturing Co. is a good shale brick, burning to various shades from buff up to deep red, brown, and chocolate with a greenish tint. And, there is all the time the same zealous effort to improve the quality and beautify the appearance of the face brick in the process of burning, as there is to get the most efficient methods from a cost standpoint. In a word, there is just as much pride in the product as there is in making a profit from it.

The personnel of the Standard Brick Manufacturing Co. of Evansville, consists of H. C. Kleymeyer, general manager; John Andres, secretary-treasurer; Wm. Suhrheinrich, superintendent plant number one; Herman Bredenkamp, superintendent plant number three; Henry F. Kleymeyer, Jr., superintendent plant number four.

Written for THE CLAY-WORKER.

MISSOURI HAPPENINGS.



REPORTS RECEIVED FROM various sections of Missouri show that fire brick plants of the state are operating almost at full capacity and that business is better than it has been for some time. This is due in a large measure to the fact that the clay plants are not short of fuel due to the coal strike. In most of the cities where the plants are located the miners have unions independent of the national organizations and they operate under local agreements, which are usually entered into in August and last for a year. In several places, including Fulton, the clay factories own their mines and in that way are able to get their fuel, besides making purchases from other mines. In several places the factories are using so much coal that coal mines are operated at full capacity. These conditions, coupled with improvements in building conditions all over the country, calling for millions of dollars of spring building have spurred on fire clay production in the state.

J. A. Dixon, who has been connected with the New Florence Fire Brick Company as assistant manager, almost since it started operations here, has been elected manager and has assumed his duties. He has been one of the most faithful workers at the plant and also is regarded as a high-class brick man, so that it is expected that the business of the firm will be taken care of in an efficient manner and that the output will continue to enlarge. Dixon has the reputation of spending more hours at the plant than any other employe and has been very painstaking in his efforts in behalf of the concern. W. O. Peters, who had been superintendent of the plant for two years, has resigned.

The plant of the Harrisonville, Mo., Brick and Tile Company recently made a record run when 82,500 brick were manufactured in one day. During the month of April the company shipped 1,500,000 of both common and face brick, which was regarded as an unusually good record, considering the rainy weather. Some days the plant could not operate because the water filled the shale pits. At the present time the company has orders on its books totaling more than 5,000,000 bricks. During the past year the entire output was shipped as soon as manufactured, and it is a common thing now to see from ten to fifteen box cars on the siding at the plant waiting to be loaded. The company has 70 men employed at present. New additions have been made to the plant during the past month, among which are two clay storage sheds. In one of these sheds raw shale is being stored, while the other shed is used for pulverized shale. Superintendent Gard says that either one of these storage sheds will hold enough shale to run the plant a month. This will do away with the shut-downs from rainy weather.

Co-operating with the United States Geological Survey and the Missouri Geological Survey, the A. P. Green Fire Brick Company of Mexico is making an effort to ascertain the resources of Audrain County in regard to fire clay deposits. Both the state and federal governments are gathering statistics in Missouri regarding the clay deposits and are enlisting the aid of the fire brick companies in getting these returns. The Green company officials have asked residents of Audrain to report all outcroppings of fire clay along streams and places where the fire clay has been encountered in digging wells and coal mines.

Poplar Bluff and Southeast Missouri have scored a real victory in certain freight rate concessions granted to the city and to the district, through the activities of L. E. Rambo of the Chamber of Commerce Traffic Bureau, special attention being given to rates on clay products. One of the important victories of Mr. Rambo in behalf of the commerce body was the establishment of a new freight rate on clay from this point to the Central Freight Association territory, which includes Ohio points, where most of the china manufacture is handled. The rates operate between here and Ohio, Indiana and Michigan, and the tariff committee of the railroads has passed on the rate. It was formerly \$7.44½ per ton to Sebring, Ohio, while under the new rate it is \$5.83½ per ton. The rates to other points are variously reduced and will mean a big saving to clay men of this section, who ship a great deal of their products to eastern plants.

Carl Craghead, an employe of the Wellsville (Mo.) Fire Brick Company, lost a finger in an accident at the plant.

Five hundred North St. Louis business men and their families visited the plant of the A. P. Green Fire Brick Company, Mexico, May 17, in connection with their annual excursion into Missouri, Mexico being decided as the place of their destination this time.

J. A. Glandon, representing the A. P. Green Fire Brick Company of Mexico, is home from Tampico, Mexico, and reports business conditions generally as showing a marked improvement.

Howard Capps, an employe of the Laclede-Christy Clay Company of Wellsville, was severely injured when a large rock fell on him while working the pit of the company.

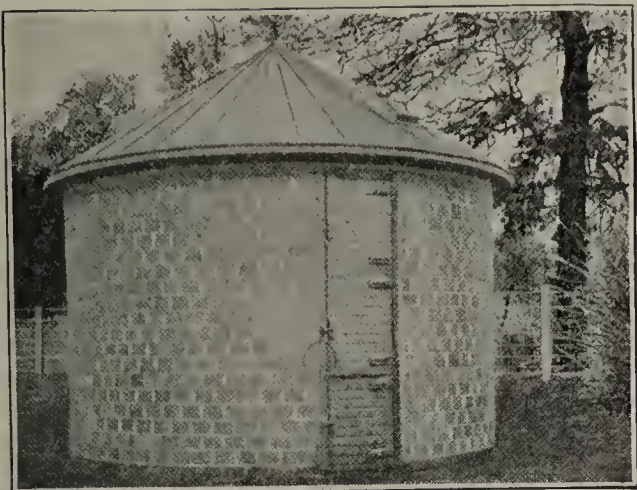
The Shale Hill Brick and Tile Company, Livingston County's largest factory, is having a fine business these days. Superintendent J. A. Dailey says the plant paid out \$8,135.95 for freight for the month of May, which is ample proof of the large business being done at the plant. More than \$2,000 of the freight bill represents increased tariffs on the coal used at the plant. Before the strike the coal came from near-by mines in Missouri, but the past few weeks the company was compelled to go to Illinois fields for its supply, with much longer haul and consequent increase in freight rates.

John S. Craig, 76 years old, a pioneer resident of Bates County and formerly an extensive manufacturer of brick in Rich Hill, died at his home in Rich Hill. After a long business career here, Mr. Craig went to Texas but he returned here several months ago. He is survived by the widow and four children.

M. D.

LARGE KAOLIN MINES IN GEORGIA.

M. F. Edgar of Edgar Brothers Company has purchased several hundred acres of clay land near McIntyre, Ga. The land is said to contain an excellent grade of white clay, free from impurities. The company will erect a large refining plant on the land, it is announced. Edgar Brothers Company have other large acreage and two established plants near McIntyre. They operate the largest kaolin clay mines in the United States.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

PROGRESS OF BRICK AND HOLLOW BUILDING TILE.

THERE SHOULD be no doubt in the mind of anyone in the industry that brick and hollow building tile are making progress in the building industry. A recent chart classifying types of buildings as designated by the materials of construction shows brick and hollow tile as furnishing 43 per cent of the total, wooden buildings a little better than 26 per cent, steel skeleton buildings 16 per cent, concrete 13, and stone and miscellaneous the balance. These figures were taken from statistics of the leading cities of the country and are therefore typical of city construction. They do not, however, give a clue to the smaller towns and country districts and what is going on there in the way of changes.

The great field of wooden buildings in the past has been on the farms and in the small towns and cities, and it is here that brick and hollow building tile are making progress and have a big field of future promise. Those who think the brick business is passing into a decline have another think coming. Brick and hollow building tile are the building materials of the future as well as of today, and they are now making rapid progress in those parts of the country where heretofore most of the building has been done with lumber.

A TILE ENCYCLOPAEDIA.

ONE OF THE best books of instructions as well as one of the best examples of advertising coming our way recently is the encyclopedia of permanent building gotten out by the Adel Clay Products Co., Adel, Iowa. This is a plan book plus bills of material and an encyclopedia of information on construction with hollow building tile, and of information on drain tile.

This enterprising Iowa concern has done more than any other one concern to feature the architectural possibilities of hollow building tile making its own face. They show on separate cards pictures of many interesting structures of hollow building tile, including fine homes in which there are $3\frac{1}{2} \times 10 \times 12$ in. Cord-tex face used and it makes a splendid showing. Then they picture stores, garages, barns and out-buildings of tile, and make a strong feature of silo work. In the showing is an experimental silo 12×70 ft. with a capacity of 400 tons, more than four times the capacity of a standard 12×30 silo, at only 80 per cent greater cost.

One of the particularly interesting features of this new publication of theirs giving plans and details of construction with their Irontile, is in the plan details of corn cribs, of which they make a special $8 \times 8 \times 8$ tile set endwise for ventilation and with angles for starting so as to furnish a sheltering tilt to the ventilating hollow tile used for the wall construc-

tion. And they do not forget to feature and set forth the merits of their filter end drain, which they claim is the first real improvement to drain tile in three generations.

We are told in the preface, too, that this book is only the beginning of more standardized plans that are to follow similar to those shown. It is good work, being done in an enterprising manner, and it should stimulate more of the same kind of enterprise on the part of other manufacturers of hollow building tile.

ASSOCIATION ACTIVITIES.

QUITE A LOT of the interest and active work of the officials of the Hollow Building Tile Association is now centered on the matter of elimination of useless patterns and sizes in keeping with suggestions of the U. S. Department of Commerce and following out in general the ideas which have resulted in reducing paving brick to a few satisfactory standards.

There was a meeting of the Standards Committee together with President Howington and Secretary Sturtevant at Washington, May 9, 10 and 11, at which the subject of elimination of useless sizes and patterns developed into a strong feature that is right now receiving active attention.

The Standards Committee is composed of H. R. Straight of Adel, Iowa, Chairman; H. C. Downer, Malvern, Ohio; William Hutton, Jr., Troy, N. Y.; P. H. Bevier, New York City; M. M. Morrow, Columbus, Ohio, and C. C. Crockett, Secretary of the Committee and Chief Engineer of the Hollow Building Tile Association. All the committee members were present except Mr. Hutton, who was unavoidably absent, and besides there were present at the conference President J. T. Howington, of Louisville, and Secretary E. R. Sturtevant, of Chicago.

The work outlined for the Standards Committee at this gathering was that of conferring with the U. S. Bureau of Standards which is doing some testing work on hollow building tile. The committee met with Messrs. Ingberg, Hull and Foster, of the Bureau of Standards, and discussed progress so far made and the future program of their fire resistance work. They are including in this not only fire testing but also compression and absorption tests and freezing and thawing tests and a study of the relation of fineness of grinding to fire resisting qualities and so on.

It is hoped that as a result of this work now going forward at the Bureau of Standards the hollow tile Standards Committee will in time be able to go before the Underwriters' Laboratory with demonstrations that will place hollow tile favorably before them and help relieve some of the several standards which have been set up.

In connection with the 45-55 ratio as written into the

association standard building code, that is 45 per cent. solid and 55 per cent. voids, it is considered impractical to change these at the present time because they are firmly imprinted on the minds of those in charge of the building departments throughout the country. Therefore, a motion was carried that the committee recommend to the directors that this ratio be maintained and that the thickness of shelves and webs on those sizes which do not conform to this ratio should be properly increased. Also that the standard weights given by the association should be revised by the following changes:

Back-up Tile.....8x5x12 2 cell increased from 15 to 16
 8x5x12 3 cell increased from 17 to 18
 Load Bearing Tile..10x12x12 6 cell increased from 42 to 45
 12x12x12 changed from 6 cell to 9 cell and increased from 48 to 54 in order to comply with the action previously taken in connection with the 45-55 ratio, and that a tolerance of 5 per cent. on weight be permitted.

There was considerable discussion on the part of the Standards Committee of the Building Code Committee report of the U. S. Department of Commerce and many suggestions arose which were set forth in a communication to Ira W. Woolson, chairman of the Building Code Committee.

One suggestion was that the use of hollow building tile has become general enough that it is entitled to a separate classification from brick and concrete. Also it is argued that it is hoped by further tests to reduce the minimum requirements for hollow building tile and the making of a separate classification makes further revision of matters of this kind easier and more simple.

In the matter of height limits of 20 feet placed on an 8-in. tile wall with an additional 5 ft. for peak or gable the suggestion is made that this be increased to 25 ft. and that the gable allowance be increased to 10 ft. for the reason that in much of the south country where high ceilings are common and necessary this extra height is imperative to take care of the 10-ft. clear space in each story of a two-story house.

In the matter of partition or division walls, since most building inspectors consider an 8-in. hollow tile wall equivalent to an 8-in. brick wall, the recommendation is that 8-in. hollow tile partition or division wall be permitted when the beam course is built of solid material one course below and one above as well as between the beams.

In the matter of foundations the committee recommended that section 34, page 40, be changed to read as follows:

"Hollow building tile may be used for foundations and cellars for dwellings provided such tile shall have a compressive strength of not less than 1,200 lbs. per sq. in. gross area and an absorption of not more than 8 per cent when tested as hereinbefore required. Tile foundation walls shall not be less than 12 ins. thick for the masonry dwelling and not less than 8 ins. thick for frame dwellings."

Exception is also taken to the discrimination against hollow tile in chimney construction and suggestions are offered for amendments in the code on this point.

Another suggestion in the form of constructive criticism was that in the code as drafted the committee was unable to find anything that would permit the building of an 8-in. wall of 4 ins. of brick and 4 ins. of hollow tile bonded together, and as this type of construction is considered feasible it was suggested it be given consideration.

A Questionnaire on Sizes and Uses.

The feature of immediate interest and attention developed at the Washington gathering in May came from a conference with R. N. Hudson of the U. S. Department of Commerce and Mr. McCullough of the Chamber of Commerce of the United States, which had to do with action looking to simplifying

the practice in the hollow building tile industry along lines similar to those which have been accomplished in the paving brick industry. To carry out this work a questionnaire is being sent out to manufacturers of hollow building tile, both non-members and members of the association, asking for detailed information about the different types and sizes made and how much of each is sold.

The object of this questionnaire is to get positive facts to start with. To get at not only the number of types and sizes made and sold but the actual figures on the relative quantities of each made or sold to furnish a guiding light for eliminating those sizes and types which are not in sufficient demand to justify being made and carried in stock.

This is in keeping with good work that has been going on under the encouragement of Secretary Hoover for some time. Most of the trade will recall that paving brick went through this mill and 66 sizes were trimmed down to 11. Since that time 4 more have been cut off, so that now the size and variety reduction in paving brick is from 66 to 7, or 89 per cent.

The Fabricated Production Department of the Chamber of Commerce of the United States had recently distributed a graphic chart, being S. and E. Story No. 20, which shows what the standardization and elimination process is doing in the way of reducing useless patterns and sizes. There are listed in this chart 48 items and the reduction shown varies from 18 per cent to as high as 96 per cent. These represent such a striking showing in economic savings that no one can contemplate the figures without being seriously impressed with the urgent need to get busy and get rid of useless sizes and shapes in all the clay products lines.

This is the way the Standards Committee felt about it. The committee was strongly impressed with the urgent need for getting busy at this work, and since they were told that it was facts and not theories and figures alone which would be essential as a real starting point, they are getting out questionnaires to all makers of tile so that they may have the real facts tabulated in a short time. It is desired to urge, too, that every manufacturer getting one of these questionnaires, whether he is a member of the association or not, immediately take it upon himself to get busy and answer it as clearly as practical, giving not only different sizes and types of tile made, but also to the best of his ability the relative quantity of each sold.

When the committee gets this data before it and tabulates it, then it will be in a position to know positively what sizes are most commonly used. Then this will enable it to go back to Washington and make its preliminary set-up of sizes which are more widely used, with positive facts back of it. Then there will be a getting busy of officials all around and a calling in of architects and engineers and a real process of elimination such as was the case in the matter of paving brick.

The Standards Committee feels that this is an important work that should have immediate attention and action and they have hopes that the data will be gotten in and put in shape for the first conference on elimination in Washington in the course of a couple of months.

Trade Commissioner George S. Brady, stationed at Buenos Aires, Argentina, informs the Department of Commerce that the National Bureau of Architecture of Argentina has taken over the largest brickmaking plant in that country, located at Tapiales, and is now producing 3,000,000 bricks per month. These bricks are to be sold to the public. The price will be 28 paper pesos (peso equals \$0.4245) per thousand f. o. b. station.

ALTHOMAR.

LESSONS OF FIRE TESTS*

Paper Read Before The National Brick Manufacturers Association Convention,
by S. H. Ingberg, Physicist, Bureau of Standards, Washington, D. C.

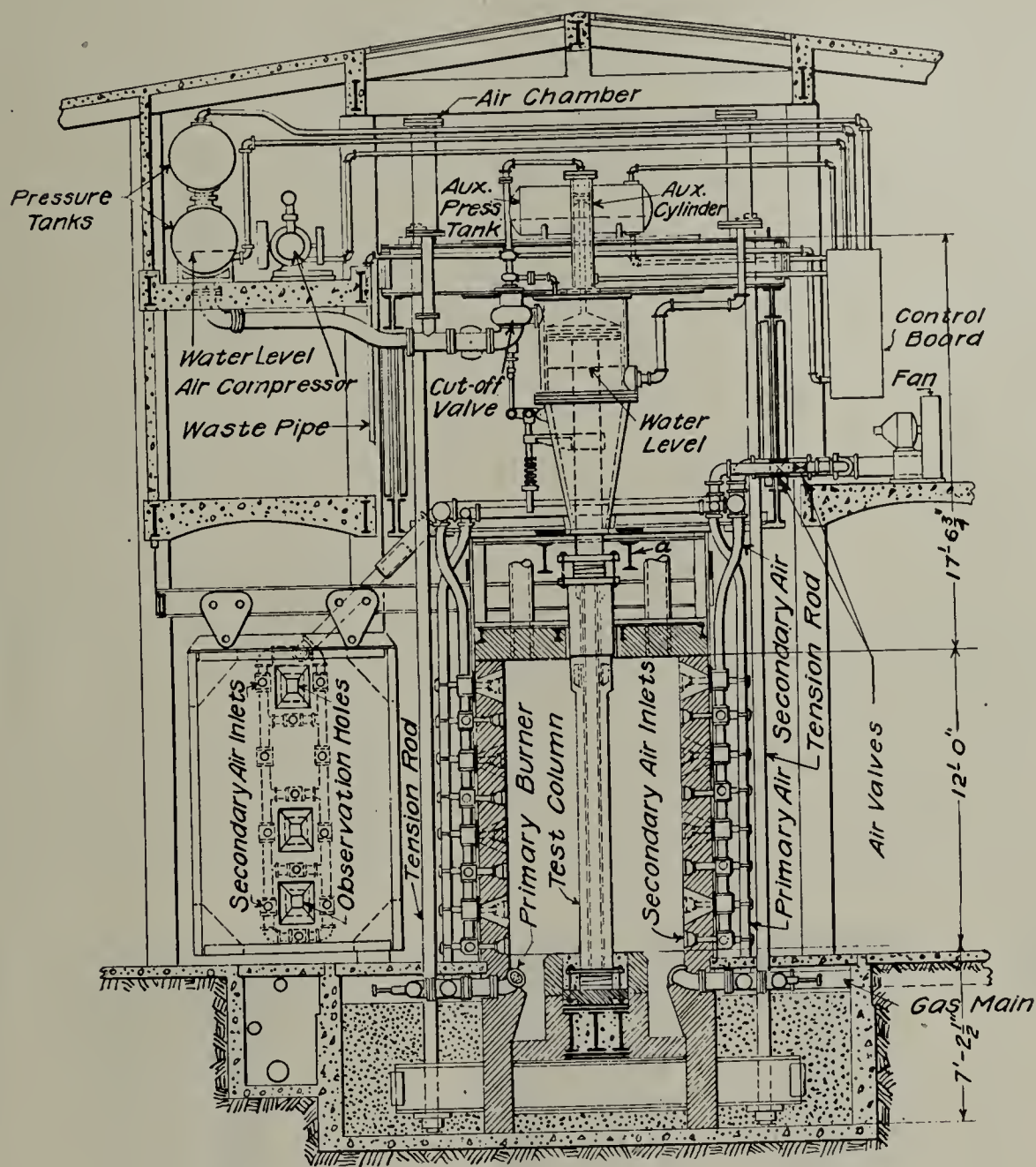


Figure 1—Elevation of Testing Machine.

Mr. President and Gentlemen of the Convention:

Fire resistance of a material or a construction means ability to withstand without collapse the damage resulting from a possible fire. It contains within it the meaning of the older term "fire proof" for which the present tendency is to substitute "fire resistive" as a more nearly expressing what is intended in this connection. Neither term has much meaning except as referred to a particular use. Testing individual brick by heating in an oven with subsequent plunging into water gives little information on the fire resistive properties of the same brick used in a wall. Taking the wall as an example, in a fire it should possess enough stability to withstand without collapse or serious permanent damage the distortion induced by equal temperature as between its two faces, and heat insulating properties to such degree as to prevent transmission of fire to material on the unexposed side by conduction or through open joints and imperfections that may offer a more ready channel for the passage of heat than the normal construction. As applied to a building column it refers to ability to support the structure through a complete burn-out of the surrounding occupancy without collapse or serious permanent im-

pairment, whichever may be the basis of design. As applied to roof coverings, fire shutters, or fire windows, it refers mainly to protection against outside exposure. While investigations and fire experience with the materials and construction used in modern building practice is very incomplete, it can be said that for a limited range in material and types of building members, we can so design them and apply the protecting materials as to obtain a desired degree of resistance. A city building ordinance is primarily a measure for securing public safety, and as such does not concern itself with conservation of material or resources; hence building ordinance requirements can generally be taken as referring to the ultimate resistance. While replacement of a few individual members after fire is perhaps not serious, assuming no actual collapse to have occurred, it should be the aim, as our knowledge of fire resistance properties is extended, to so construct buildings, particularly those involving the higher types of fire resistive construction, as to provide protection against exterior exposure sufficient to prevent the entrance of fire from without, and against interior exposure so that no serious structural damage will result from a fire that consumes everything combustible within, and also, provision by means of partitions, enclosure of vertical and horizontal openings and similar constructions, for confining the spread of fire when started. For buildings of less resistive

*Published by permission of the Director of the Bureau of Standards.

character it should be the aim to develop all the resistance inherently possible which, in relation to what is ordinarily attained, may be quite large.

In fire tests we measure the resistance of a member by the length of time it withstands under working conditions, such as imposed loading, a fire exposure following a predetermined time-temperature relation taken together with the amount of destructive effort produced. The actual building fire is a very variable quantity, depending upon the amount and character of combustible material, and for individual fires upon the various factors that affect air supply in its relation to rate of combustion. The amount and character of combustible material is determined in a general way by the occupancy and by the amount of material subject to combustion in the building itself. In occupancies we distinguish residence and office use as affording perhaps the minimum amount of material subject to fire, followed by manufacturing, merchandising, and storage, with increasing larger amounts. The difficulty of predicting intensity and duration of fire in buildings can be readily appreciated, but in assuming the conditions for each case in point of material and other factors that produce maximum intensity and duration we can predicate a fire condition that in a given case cannot very well be exceeded. We can check this roughly by comparing effects of fire at progressive stages in the fire test with effects of building fires on similar materials and constructions. Also, more definite information can possibly be gained by burning out materials in a structure designed for the purpose, equivalent to that present in typical occupancies. By whatever manner the knowledge is attained it enables the results of fire tests to be applied to best advantage in practical construction. If within a limited range the fund of knowledge at present available enables buildings to be so constructed as to suffer only surface damage from fires within or without, a further extension of this knowledge could greatly increase the range of application and enable the object in all cases to be attained with greater economy.

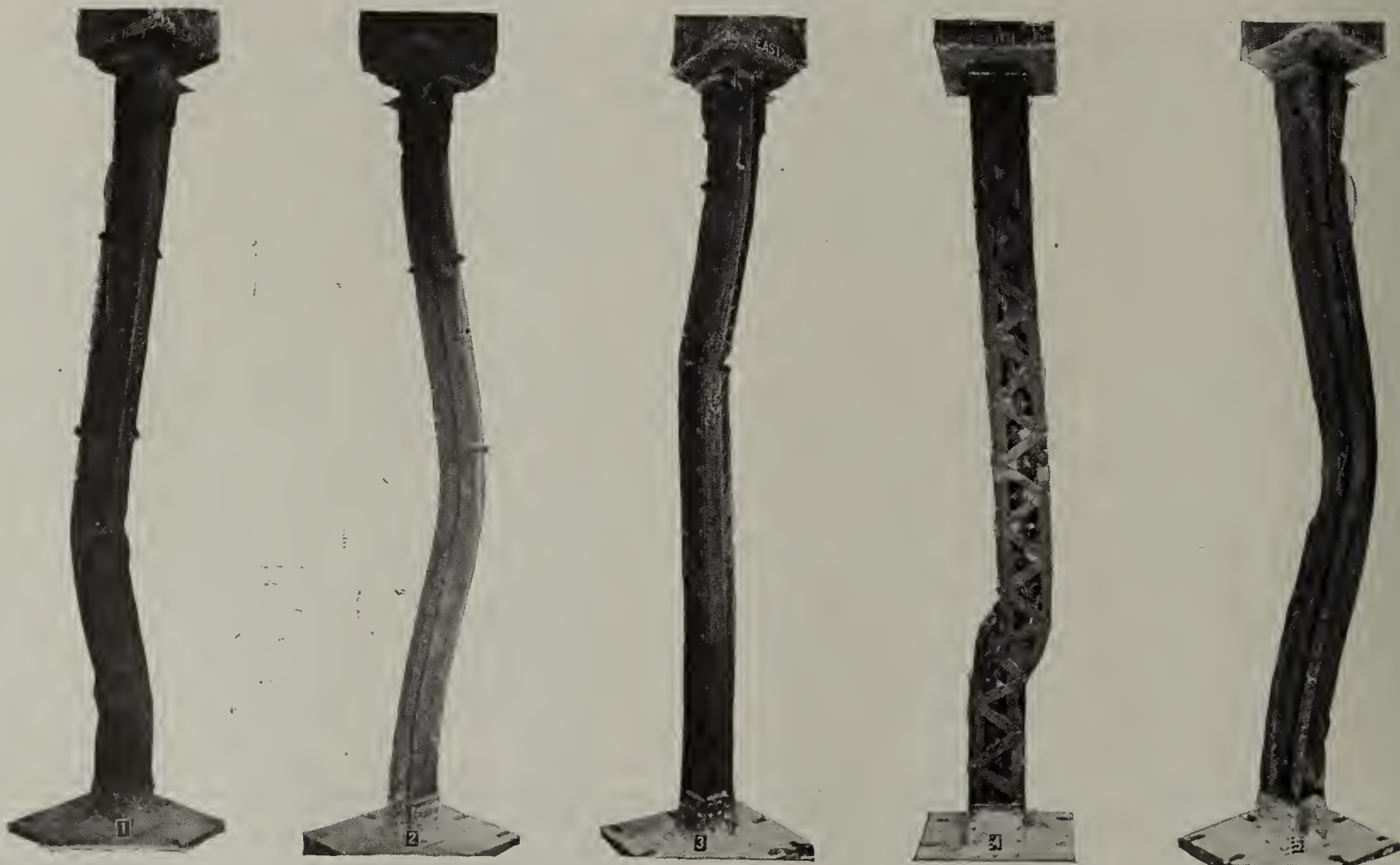
This should mean much to the architect, builder, and owner. It should be an important factor in reducing the national fire waste, which now approximates \$300,000,000 yearly, and with coincident wastes and losses accounts for an annual loss in material and human effort not far below one billion dollars. This is in addition to the life loss, which, while we can not reckon its value in terms of the medium of exchanges, represents a really large national loss.

We have perhaps a better appreciation now than before the war of what a tax of a billion dollars means even if distributed among a 100,000,000 population. Formerly the total expenditures

of the national government did not greatly exceed this amount, and obtained through customs and excises was not felt as a serious burden. With a national budget due to the war of several times this amount, the raising of every added billion above the first one or two, whether done by direct or indirect means, reacts unfavorably on the industrial life of the nation, and the problem of the legislator is to devise methods whereby the effect may be minimized. The fire tax, like every other tax is paid in large part by the ultimate consumer, which under almost all existing economic systems means the one least able to pay. Considered singly, a fire is a human misfortune, resulting as it does in the loss of home, interruption of business, and at times personal injury and loss of life. Added to this the general aggregate fire loss comes as a drain on the nation's economic life, that eventually reacts on the individual in decreasing the net return of his effort.

All but a small percentage of the fire waste can be prevented if we could but reach all the material and human elements involved. Carelessness is a fire cause of first consequence, which, as such, education and agitation can minimize but never banish. Aside from the various automatic and other means for the detection and extinguishment of fire, with which we are not now concerned, the structural factor remains as the principal means by which a large proportion of this waste can ultimately be prevented. As previously indicated, this is accomplished by providing against exposure from without, decreased opportunity for originating and spreading within, and making the damage small by the use of fire-resistive materials properly applied.

As manufacturers and promoters of a fire-resistive product, you are without doubt interested in the structural phase of the fire prevention work, and particularly in its application to brick and constructions into which brick enters in whole or part as a material. During the past year we have conducted at the Bureau of Standards a series of fire tests of brick walls which are now nearing completion as far as clay brick is concerned. These test walls are fairly large, being 16 feet long and a good story height (11 feet) high. They are tested as made of brick from several types of clay laid in lime mortar, lime-cement mortar, and straight Portland cement and sand mortar. Some walls are built solidly into their containing frames, and others are merely supported in the frames and otherwise free to distort under the fire exposure. We generally test them in 8-inch and 12-inch thickness; also a few tests will be made of the 4-inch thickness. Most of the walls are made with brick laid flat in ordinary American bond. Some tests have also been made with walls of brick on edges as in the recently introduced types of hollow wall. A consistent



No. 1—Rolled H No. 2—Plate and angle No. 3—Plate and channel No. 4—Latticed channel No. 5—Z-bar and plate
Figure 2—Unprotected structural-steel columns, test Nos. 1 to 5, after fire test

effort was made to obtain representative material and workmanship, the walls being laid upon a contract basis with experienced workmen laying a normal amount of brick per day.

While too early to form final conclusions, it can safely be said that brick and brick construction form one of the most fire-resistive elements that enter into buildings as made today. As used in appropriate thicknesses the results of the tests indicate that the walls not only adequately discharge their functions during fire, but also, for the heavier thicknesses where the fire exposure is not too severe, the permanent distortion or loss of strength is not sufficient to preclude reuse of the wall after the fire.

While there remains always the necessity for maintaining the quality of the product and securing good design and workmanship in construction, a large part of the interest of the brick industry in fire protection measures will consist in securing the proper resistance in the structures in which brick is used in combination with other materials. The main types of construction and provisions to be observed will be briefly indicated.

In the lower range of resistance we note the wood-framed brick veneered or brick-walled type. The frame work is of combustible material in small sections forming hollow spaces that afford a ready means for the spread of fire when started, and make extinguishment difficult. There has been much commendable effort put forth during late years to make this construction more resistive by fire-stopping the hollow spaces in walls and floors, and without doubt much improvement can be obtained in this manner. The use of incombustible interior finish as plaster on suitable bases, particularly at danger points such as basement ceilings is another important development. Plaster has a fair degree of fire resistance if it can be applied so as to remain in place during fire. Other points of improvement include proper chimney construction, fire-resistive roof coverings, and party walls, with suitable protection of wall openings.

Timber mill construction comes higher in the scale because of the larger size of the members and absence of hollow spaces. With fire-resistive walls and roof, suitable protection of openings in walls and floors, and extra structural precautions for hazardous processes, this type has developed a good degree of fire resistance, particularly when used with automatic means for detecting and extinguishing fire.

A further type that does not possess much ability to resist fires originating within but that presents fewer vulnerable points to outside exposure, is the brick-walled construction with interior frame work of unprotected metal. A lesson that was learned by experience in the early days of modern framed construction was that unprotected metal members, while incombustible, are not fire re-

sistive, and fail readily on exposure to fire under their own or added imposed loads.

The next and highest general type consists then of incombustible exterior and interior walls, with fire resistive incombustible interior frame work consisting of protected metal or reinforced concrete, with floor filling and partitions of incombustible material, and a variable amount of combustible material in the floor finish, window sash, and interior trim. The same precautions against exterior exposure, and spread of fire within are necessary as in the other types. Also it is noted that even if a minimum amount of combustible material is present in the construction itself, the contents are as a rule of combustible character. The range of fire resistance developed by this type is large, depending upon the materials used and how they are applied.

The investigation, the results of which will be briefly indicated, deals with the fire resistance of the interior framework of buildings of the higher fire-resistive types, and in particular with columns as being the most important member in interior framing. With due precaution the results with columns can be applied to some extent with reference to other members. The research, which is one of the most extensive engineering investigations on any one subject that has been made, was carried out in technical co-operation by the Associated Factory Mutual Laboratories of Boston, Mass., the Underwriters' Laboratories, Chicago, Ill., where the tests were made, and the Bureau of Standards. The author represented the bureau throughout the investigation, and had immediate charge of the experimental program.

The columns were subjected to working load and to fire in a gas-fired furnace (Fig. 1), the temperature rise in the furnace following a predetermined time-temperature relation, which after a rapid rise during the first five or ten minutes approximated 1700 degrees F. at the end of the first hour, 2000 degrees F. at four hours, and 2300 degrees F. at eight hours, to which point only the most resistive constructions could be tested, the efficiency of the column or its covering being judged by the length of time it withstood the combined load and fire exposure. Figures 2 to 9 give views of columns before and after fire tests. Most of the deflection and a considerable portion of the visible damage to the covering occurred at the time of failure. The failure was in all cases due to heating of the metal, concrete, or timber, until it was unable to support working load. This was hastened in some cases by spalling or falling off of parts of the covering exposing the metal to the full heat of the furnace.

Fig. 10 gives view of columns after the fire and water tests. In these tests the columns were exposed to fire for a period not



No. 35—4-inch lime-stone (1:3:5)

No. 36—2-inch trap rock

No. 37—4-inch trap rock

No. 38—2-inch Joliet gravel

No. 39—4-inch Mera-pec River gravel

No. 45—2-inch Mera-pec River gravel

Figure 6—Concrete protection, test Nos. 35 to 39, and 45, after fire test

exceeding one hour, after which a standard fire stream was applied over three sides.

Fig. 11 gives a group comparison in point of time to failure of all columns in the fire test series. It will be seen that unprotected structural steel columns (Fig. 2) were found to be the least resistive, withstanding the test for 11 to 21½ minutes only. Unprotected cast iron and timber columns (Figs. 3 and 9) failed after 35 to 45 minutes, the failure of the timber columns being due to the softening of the timber at the cap bearings from heat conducted to them by the cast iron or steel plate cap introduced near the top of each column. This can be remedied by the use of reinforced concrete or suitably protected metal caps, and the resistance of timber columns considerably increased thereby. Ordinary concrete filled pipe columns have about the same fire-resistance as unprotected cast iron columns of the same size. Filling the re-entrant portion or interior of steel columns with concrete or similar filling (Fig. 4) increases their resistance as shown by the results for the group of partly protected columns in Fig. 11, there being a considerable variation in results with the form and size of the column. Successively higher degrees of protection for metal columns can be attained by use of single or double layer of plaster on metal lath, hollow clay tile, gypsum block, or brick, as shown in the group comparisons.

Two columns protected by brick were tested (Fig. 8); one, No. 68, with brick on edge and end, which proved somewhat unstable, a considerable amount of brick falling off in the first half hour of the test, exposing portions of the steel, failure taking place at 1 hour, 41 minutes. In the other test, with brick laid flat in the usual manner, the full insulating value of the covering was developed, failure taking place at 7 hours, 13 minutes. In both protections all spaces between the covering proper and column were filled with brick and mortar.

In concrete coverings there is considerable range in the effectiveness of the protection, due mainly to the difference in mineral composition of the concrete aggregates. The same is true of reinforced concrete columns, the columns tested being made with trap rock or limestone aggregate, which gives the highest results, due to absence of tendency to crack and spall, and good heat insulating properties of the concrete.

With all materials, the resistance varies not only with the thickness of the covering, but also with the size of the covered column as expressed in area of solid material in the cross section. This is shown graphically in Fig. 12, where the combined area of metal, concrete, and burnt clay in columns protected by clay tile and brick is plotted against time to failure, a fair variation of the one with the other being apparent.

Finally, the fire test durations for comparable columns and covering are averaged, and with some regard for the effects of water

application on similar constructions, and some allowance for variations in material and workmanship not developed in the tests, the net result for each group is taken as the measure of safe resistance of similar columns and protections in buildings under fire. The values of the resistance period for almost all of the different column types and covering materials at present in use in this country was determined in the test.

It is not possible to present here in detail the results of the investigation. This has been done in the full reports on the work which can now be obtained from the organizations concerned. Enough has been given to show that even with the more resistive materials intelligent selection is necessary if a structure is to be attained with a comparable fire resistance for its various members that is adequate for the conditions imposed by its location, construction, and use. (Applause.)

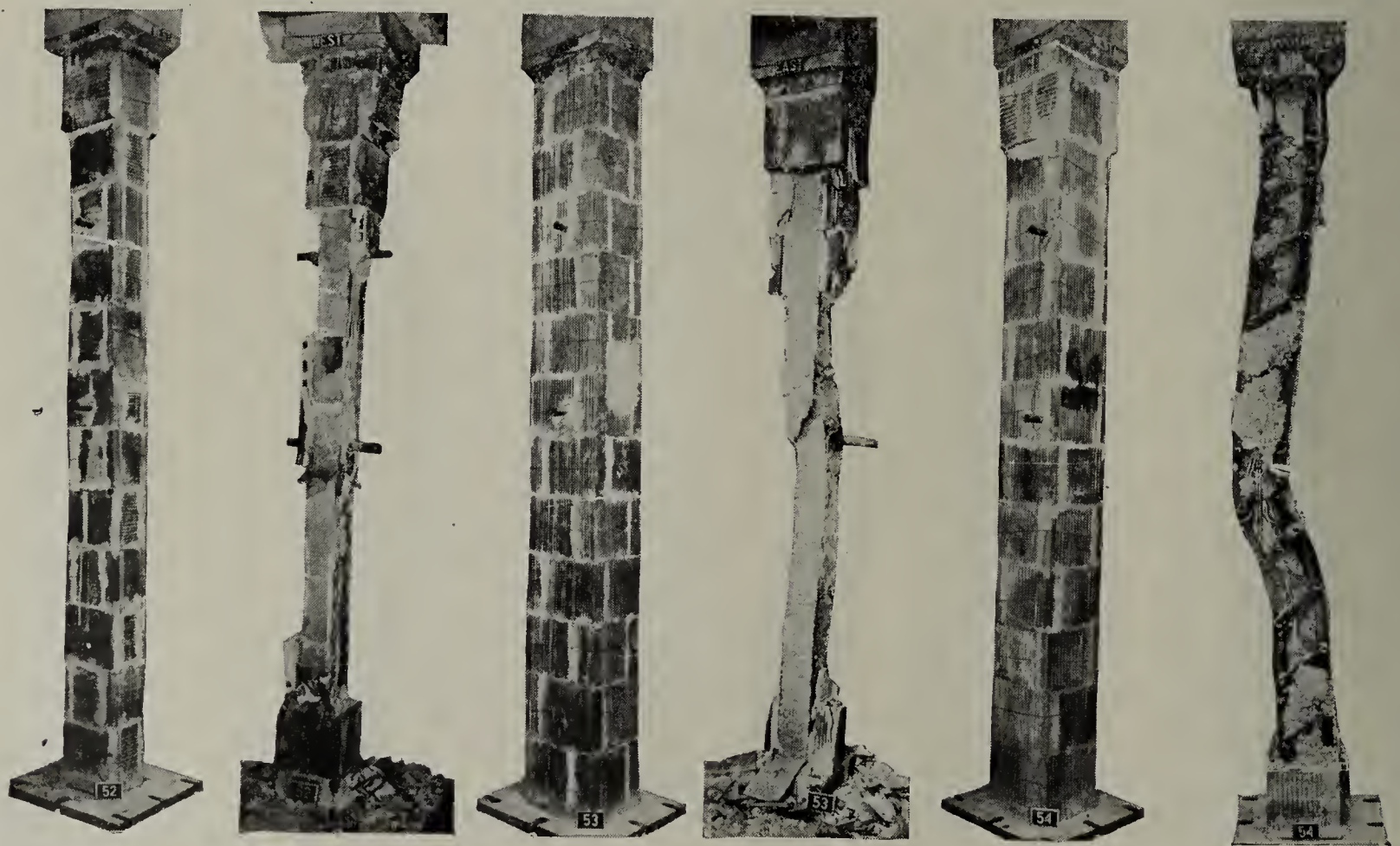
THE AMERICAN CONSTRUCTION COUNCIL.

THE CALL HAS gone forth for an organization meeting at the Washington Hotel, Washington, D. C., June 19-20, of the American Construction Council. This new organization in the construction industries is being developed to correlate the efforts toward betterment made by the existing organizations and it is hoped to join in the new council all the important organizations in the various branches of the building and material industries and get therein a union of all elements for better service.

The possibilities of the good which may come from such an organization are such that Secretary Herbert Hoover has consented to preside at the formal organizations, and Franklin D. Roosevelt has agreed to accept the presidency. Every organization in the building material and allied industries is asked to send delegates to the gathering and to take an interest and an active part in helping develop the American Construction Council.

Mr. Roosevelt in a recent circular letter sent out in connection with the call says that he feels so much good can be done through this organization that he is sure the meeting will be one of great importance.

The temporary headquarters are 1053 Munsey Building, Washington, D. C., with R. C. Marshall Jr. as chairman.



Before test
No. 52—2-inch shale

After test

Before test

No. 53—4-inch shale

After test

Before test

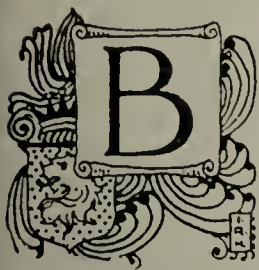
No. 54—2-inch semifire clay

After test

Figure 7—Clay-tile protections, test Nos. 52, 53, and 54, before and after fire test

Written for THE CLAY-WORKER.

THE CHICAGO SITUATION.



BUILDING ACTIVITIES continue in Chicago upon a much better basis than during last year. Almost without exception the record of new permits, and in general of estimated costs involved, for each week is at least twice that of the corresponding period in 1921, and more often it is three times the amount of the comparative former period.

Owing to the great need for dwellings the bulk of the work is, and probably for the remainder of the season, will be, in apartments, apartment hotels, two and three story flats and individual homes.

The esthetic value of the use of attractive face brick in the exterior walls of a structure which are not the "parade front" is beginning to receive attention which is interesting and gratifying, not only to brickmakers and dealers, who naturally have a strong personal interest, but to architects, artists and the increasing number of public-spirited citizens who are constantly behind city planning and city beautifying movements. If public sentiment along this line continues to develop the day will soon be gone forever when it will be possible to have a renaissance front, an 1872 period common brick side and a drygoods box rear for a modern Chicago building. Said the Chicago Tribune of June 4, in commenting in its real estate department upon a certain projected north side hotel:

Face Brick on All Exterior Walls.

"It's always worth calling attention to owners who think enough of their neighbors and the neighborhood in general to build their buildings with face brick on all sides."

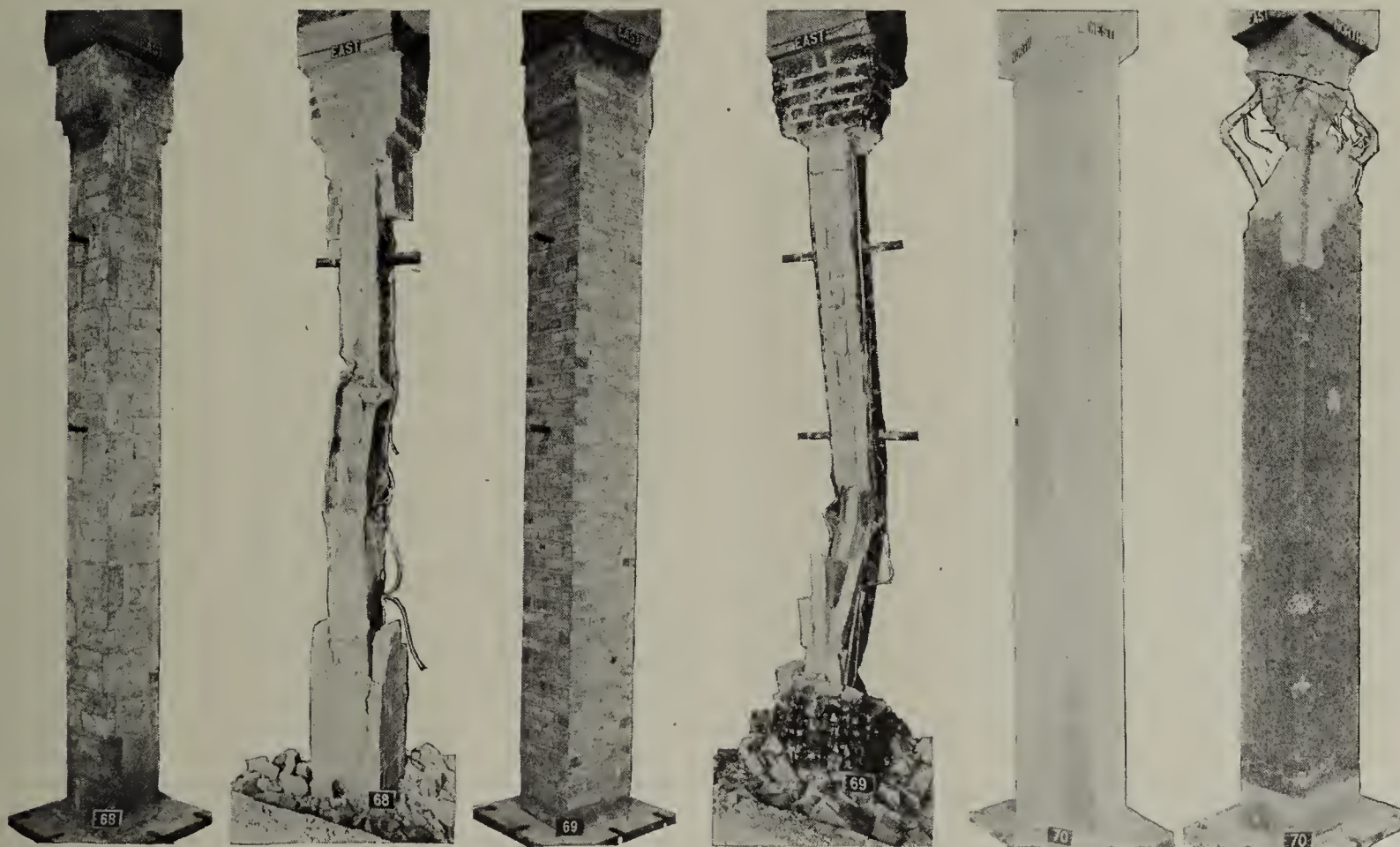
The particular hotel referred to in this article is the new Rienzi, which is to occupy a site just east of the old-time and old-fashioned German garden of that name in the historic era B. P. It is being built at 554 Diversey Parkway by Fred

Kuehl and Gustavus Bruchman, owners of the old Rienzi, and will stand partly on the site of Mr. Kuehl's former residence. It is to cost \$1,500,000, and the brick chosen to please the eyes of those who live in the rear as well as those who view the main entrance will be the rich tapestry brick which has been used in Chicago structures which are artistically notable. The hotel will be of the type of the Ambassador residential hotel, having 180 rooms, fronting 186 feet on the boulevard with a depth of 60 feet. There will be a garage for 200 cars at the rear. There will be a coffee shop and also a winter garden on the first floor.

Another hotel project, even larger, is already under way on the south side just north of Jackson Park, where at Fifty-sixth street, between Hyde Park Boulevard and Cornell avenue, work has begun on a new Windermere hotel, directly across the street from the present Hotel Windermere. S. W. Strauss & Co. have underwritten a \$3,700,000 loan on the new hotel and the old combined and have agreed to an additional loan of \$1,000,000 after the completion of the new structure in connection with the erection of its duplicate on the site of the present hotel Windermere, which then will be torn down. Joseph H. Defrees, who has just retired as president of the Chamber of Commerce of the United States and who for several years was the aggressive head of the Chicago Association of Commerce, is the principal owner of the Windermere hotel and the directing force supervising the needed enlargement to meet expansion.

Another great hotel in the same general neighborhood will be the East End Park hotel, which will contain 153 apartments of one, two, three and four rooms. It will stand on the northwest corner of Hyde Park boulevard and Fifty-third street, diagonally across from the Cooper-Carlton hotel and overlooking East End Park and the lake. It will have an exterior of red face brick and represent a total investment of about \$2,000,000.

Leaving the growing field of hotels for a moment, a glance at 1922 figures for buildings of single family dwelling and two-apartment buildings suggests that for all the backsets



Before test

After test

No. 68—2 1/4-inch surface-clay brick

Before test

After test

No. 69—3 3/4-inch surface clay brick

Before test

After test

No. 70—Vertically reinforced limestone concrete

Figure 8—Brick protections, test Nos. 68 and 69; reinforced-concrete column, test No. 70, before and after fire test

and some unfavorable conditions which still persists, we may have a new record set in number of structures of this kind which may go up within the current year. A survey made by the renting division of the Chicago real estate board shows that between January 1 and May 1 of this year work actually was started on 1,473 one-family homes, and 769 two-flat buildings. The northwest side and certain outlying territories on the south side appear to have been favored locations for this home-building activity.

Some attention is once more being given to construction of buildings for religious and educational purposes. Trinity Methodist Episcopal Church, after a long life history dating back to Civil War days, chiefly in the neighborhood of Wabash and Indiana avenues and the early twenty streets, has moved out to the prosperous residence section of Beverly Hills, where the combined congregations of Trinity and the Beverly Methodist Episcopal Church will erect a magnificent new home for "Old Trinity" at the northwest corner of Winchester avenue and Ninety-ninth street. The architecture will be in Gothic style. In addition to the church building proper, which will seat more than 600, there will be a community house with a low tower to carry chimes, and having an assembly hall seating 550 for Sunday school concerts, etc., and a gymnasium for the young folks. The estimated cost will be \$186,000.

The Temple Baptist congregation will erect a new church home at Humboldt boulevard and Cortland street, costing in the neighborhood of \$100,000. A parsonage will be constructed in connection with the church. This construction also will represent the consolidated efforts of two former churches, the Pilgrim and the Humboldt Park Baptist Churches.

Another step in the development of the plans of Loyola University for fourteen buildings upon its twenty-five-acre campus will be taken with the erection of the fourth of this group in the near future. Plans have been drawn by Architect Paul V. Hyland for a \$260,000 administration and faculty building.

A new \$250,000 synagogue for the Logan Square Congregation Shaare Zedek is now under way, the corner stone having already been laid. The structure will seat 1,800 and provisions will be made for a community center.

Plans of Ceramic Society.

Secretary William W. Wilkins of the Chicago Section of the American Ceramic Society announces that the Chicago Section plans to hold its next meeting in Danville, Illinois, about June 25. It is planned that the Chicago members shall leave Chicago on the forenoon of that day, visit the plants about Danville in the afternoon, followed by a dinner and a meeting in the evening.

It is expected that the amalgamation of the Chicago section with the Illinois Clay Manufacturers' Association will be brought about at that time. The forenoon of the second day of the meeting will be devoted to visiting nearby plants and after luncheon there will be an inspection of the ceramic department of the University of Illinois at Champaign.

Mr. D. Stevens of the Acme Brick Company, Danville, Ill., is in charge of arrangements for this meeting. The officers of the Chicago Section of the American Ceramic Society are: Chairman, F. L. Steinhoff; vice-chairman, B. T. Sweely; councillor, C. W. Parmelee, and secretary, Mr. Wilkins of Lewis Institute.

SCRIP.

OUTPUT OF FULLERS EARTH.

THE PRODUCTION of fullers earth in 1921 is given by a bulletin of the United States Geological Survey as 105,609 short tons valued at \$11,973,848. This is a decrease of 18 per cent in quantity and 21 per cent in total value as compared to 1920.

INDIANA STATE HIGHWAY DEPARTMENT ADOPTS BRICK FOR NATIONAL ROAD.

A CONTRACT for the construction of the first brick road in Indiana to be built under the direction of the State Highway Department has just been let at a cost of \$219,916.78, a total of \$111,916.78 more than the low bid for another material not infrequently offered as a substitute for brick.

Indiana was one of the last states in the union to establish a highway department, and while many miles of brick roads have been constructed in the past by the various counties, the contract just let is the first action of this kind by the state.

The section to be paved with brick is 6.897 miles long, and extends from Putnamville to a point 1.5 miles east of Mt. Meridian. It is a part of the old National Road which runs entirely across the state, extending from Cumberland, Md., to Jefferson City, Mo., and is the principal traffic route between Indianapolis and Terre Haute.

Design of construction calls for a 5-inch concrete base, 3-inch brick and asphalt filler.

It argues well for the durability and low maintenance cost of brick pavements that the State of Indiana chooses this material for its main east-and-west highway, with the first cost ranging so much higher than that for a substitute paving.

BRICK PAVED HIGHWAY IN ILLINOIS.

THE CONTRACT FOR CONSTRUCTION of the first brick road to be built by the State of Illinois since Governor Len Small's "\$30,000-a-mile" edict went into effect has just been let by the Illinois State Highway Department. While smaller political units in the state have been building brick roads right along, this is the first action of its kind on the part of the state highway department, under the present administration.

This follows closely a similar action on the part of the Indiana State Highway Department. Indiana, however, was one of the last states in the union to establish a highway department, and while many miles of brick roads have been built by the various counties in Indiana the recent contract by the state was the first since the formation of its highway department.

Thus two states which rank high in proposed mileage of modern, improved highways have put their official stamp of approval on vitrified brick for highway surfacing after a more or less extended period of concentration on other types.

The Illinois contract, let to J. E. Craine of Murphysboro, Ill., is for 13.32 miles on Route 2, sections 12 and 13, extending from Cobden to Dongola, Ill. Specifications provide for a base of 10 inches of novaculite, laid in two 5-inch courses, a 1.5-inch sand cushion, 3-inch vitrified brick and asphalt filler. Curbs of compacted novaculite will be 12 inches wide and 4.5 inches deep. The pavement will be 18 feet wide.

"Novaculite" is a trade name of a local material found in southern Illinois, which is a silica product, or what some engineers call disintegrated chert. It contains alumina and oxide of iron, commonly called "clay binder," and when rolled and compacted sets up hard with a cementing characteristic. Like crushed stone, slag, or gravel where available, it is looked upon as a good base material when a rolled base is desired.

The Cobden-Dongola road is a portion of one of the principal north-and-south highways of the state, which, starting at Decatur, runs south through Pana, Vandalia, Centralia and Carbondale to Cairo, on the Mississippi river. When com-

pleted it will be one of the heavy traffic routes of the state.

In Indiana the recent brick contract was for a 6.89-mile section of the heavily traveled and widely known National Road. There, too, 3-inch brick and asphalt filler were specified.

BRICKMAKING IN THE SCHOOLS.

ONE WAY to promote the brick industry is to teach the younger generation the fundamentals of brickmaking and instill in their minds the fact that brick is the one indestructible building material. With that in mind, the indefatigable brick booster, William H. Lucktenberg of the Burton Townsend Brick Co., Zanesville, Ohio, was glad to have an opportunity to tell a little school girl how to make brick. She wanted to prepare an essay on the subject and took copious notes for that purpose, and in due time she presented to her class the composition, which is sufficiently interesting to meet the approval of her instructor. We are pleased to reproduce it entire and would suggest that brickmakers generally might encourage such offerings and so instill in the minds of the coming generation an appreciation of the unequalled excellence of building brick.

The composition follows:

HOW TO MAKE BRICK.

Many building and paving bricks are made out of hard blue shale. This shale is found in banks or quarries, which run anywhere from ten feet to several hundred feet high. The shale banks around Zanesville are from ten feet to fifty feet high.

To prepare the raw material for making brick, it is necessary to use drills that bore deep holes down into the shale. Then dynamite is put into these holes and exploded so as to tear the shale bank down. This done, it can be loaded into small cars; these loaded cars are then pulled up a tramway by a hoist engine, where the shale in the cars is later dumped into a large crusher. The shale is then crushed almost as fine as crushed stone that is used on the streets. This crushed shale is next dropped into large steel pans that have fine steel screens in the bottoms of them, where it is pulverized by two large steel Muller wheels. After the shale is pulverized, it is taken up to the top of the building by elevators and dropped on fine screens so as to screen out the coarser particles of the shale, which are again returned to the dry pans for further pulverizing. The finer particles that fall through the screens after being carried up in the elevators are conveyed to the pug mill. This shale that is used in the pug mill is ground almost as fine as flour. In this pug mill there is a series of knives that are deflected so that they will push forward the material. There is a stream of water running into the pug mill and the fine shale is mixed with the water as it is pushed forward until the mass is of the consistency of stiff dough.

It is then dropped into a brick machine; from there it is pushed out of the machine through a die that forms a clay column or continuous ribbon of clay about eight inches wide, which is carried along on a belt for a short distance to a cutting machine, where the bricks are cut the desired size. The bricks are then hacked on steel dryer cars and put into dryer tunnels to dry. After being in the dryer tunnels about twenty-four hours, the dried bricks are set, with spaces left between them, in large kilns.

There are from seventy-five thousand to one hundred and fifty thousand building bricks set in these kilns. After the bricks are set, the doors on each end of the kilns are closed and a slow fire is started in the furnaces around the kilns

in order to evaporate the water that is still left in the bricks. The fires are gradually made larger in the furnaces so as to burn the carbon out of the bricks. After all the carbon is out, the fires are made still larger and hotter in order to amalgamate the clay together. The heat in the kilns is carried up to two thousand degrees, Fahrenheit. It takes about seven days to burn off building bricks and from nine to ten days to burn off paving blocks. It takes almost one ton of coal to burn off one thousand building bricks and one and one-third tons of coal to burn off one thousand paving blocks. After the bricks are burned off, it takes about a week to cool them.

Burned clay is one of the most lasting products made by man. It is weather-proof, moisture-proof, fire-proof and practically indestructible. History teaches us that bricks have borne records from ruins of cities that had existed more than four thousand years ago. The Assyrians and Babylonians kept their records on clay tablets, from which we today learn their history.

In accordance with this ancient custom, the brick manufacturers of the United States recently tendered President Harding an invitation, inscribed on a clay tablet in the shape of a brick, to attend their convention at Indianapolis, Ind. President Harding was greatly pleased to receive such a remarkable invitation and kindly thanked the maker of the tablet.

This presidential tablet was made in the Burton-Townsend Company's plant at Zanesville, Ohio.—Written by Claire Durant, age 13 years, Zanesville, Ohio.

FOR THE OPEN SHOP.

The appended open shop resolution was adopted by clay products manufacturers from all parts of the State of Ohio, representing 50 per cent or more of the production of the State, at a meeting held at the Hotel Deshler, Columbus, Ohio, Saturday, June 3, 1922.

Whereas, We as employers of many Ohio citizens working in our plants and clay pits fully realize our responsibility to the country at large and to each severally the communities where our plants are located so that construction of much needed homes, public buildings and other projects can continue, and

Whereas, The financial responsibility of continuing to operate our plants and clay pits rests solely with us as individuals, without assistance from outside sources, and

Whereas, We intend to maintain and operate our plants and clay pits without interference from outside sources, and

Whereas, We intend to continue to deal with our employes, as such, without discrimination, toward the end that the past peaceful conditions may continue, and

Whereas, We Ohio clay products manufacturers in meeting assembled, deplore the strikes that have been caused in Ohio by paid agitators, be it therefore

Resolved, That we pledge ourselves to continue to operate our properties as heretofore under open shop conditions and counsel with one another toward that end.

OHIO CLAY PRODUCTS MANUFACTURERS.

H. A. Jung, Secretary Commissioner

The National Clay Industries Association.

Did you ever notice how much easier it is to see the other fellow's duty than it is to see our own? Maybe that's why so many fellows leave it to the other fellows to get up convention papers and to do the other essential work to make a convention a big success.

THE GATES AUTOMATIC STOKER.

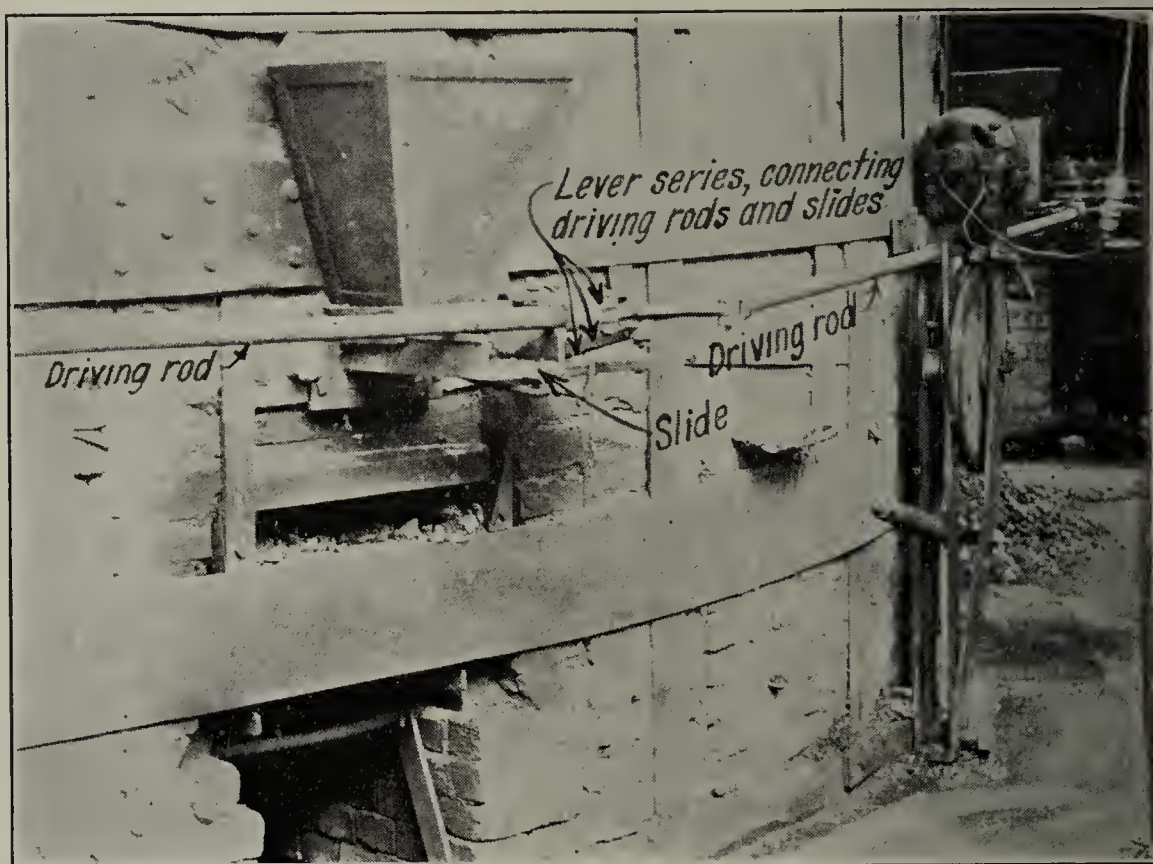
A simple device by which brick, tile and pottery—in fact, all clay products—may be burned more uniformly with less fuel, in a shorter time, and with less labor, and applicable to all kilns, particularly down-draft kilns. The illustrations show it in use on round kilns at plant of American Terra Cotta Company.

ECONOMY is a word that is coming back. It was overlooked during war times but now in these piping times of peace and readjustment, it is again coming into use and has considerable significance in industrial affairs. It really has a meaning now as we approach something like normal conditions in the business world, for any measure or element of real economy is more than ever a matter of real importance. Hence we are pleased to chronicle an improved method of fuel application that spells a large measure of economy which manufacturers of brick, tile, terra cotta and pottery will find represents a saving that may turn a deficit

tically, for there are no wearing parts nor elements of danger. Like a good eight day clock, once it is wound up, set in motion, it runs of its own accord. All the burner has to do is start it and the fires are fed uniformly as required. There is virtually no waste of coal, of itself a worth-while saving.

As stated, it has been in use at the American Terra Cotta and Ceramic Co. plant for two years and the superintendent, Mr. Ernest Clark, states that it pays for itself in less than six months. He says that there is no longer a cloud of black smoke seen coming from the stacks as was the case when hand firing was in use. Their kilns are of the round down draft type, averaging 22 feet in diameter with eight furnaces. Formerly these kilns required 18 or more tons of coal. With the Gates automatic stoker this is reduced to 13 tons. By the old method the kilns were under fire 125 hours or more, now the average is 110 hours and there is a corresponding saving in labor. There is no waste of coal nor is it so important to have a high grade of coal which is handled with less labor and consequently at less cost. The ware is better and more uniformly burned, and the percentage of culls

*An Automatic Stoker
Claimed to Reduce
Fuel, Labor and
Burning Time
and Produce
a Better Product.*



into a surplus, something very much to be desired by all large and small plants, and it seems applicable to any and all permanent kilns using coal as fuel.

The device is a very clever mechanical stoker which when attached to a kiln saves a percent of the fuel, saves labor and produces better and more evenly burned ware. It also saves time by shortening the burning period—three distinct elements of economy that are closely co-related; that is, they go together, each depending in part upon the other.

The device is the invention of Major Gates of the American Terra Cotta & Ceramic Co. It has been tested at the plant of that company and after two years' use has proven in every way satisfactory. Now that it is a demonstrated success, it is offered to the trade by the Clay Service Corporation of Chicago, of which concern Major Gates is the chief executive. He recently severed his connection with the A. T. C. & C. Co. that he might introduce this automatic stoker and other devices to the clay crafts.

The accompanying illustrations show the principal features of the mechanism, which are simple and comparatively inexpensive to start with. Its first cost is its only cost, prac-

is reduced fully 50%. The stoker really should be seen to be fully appreciated, but the reader may get an idea of its construction and operation from the accompanying illustrations.

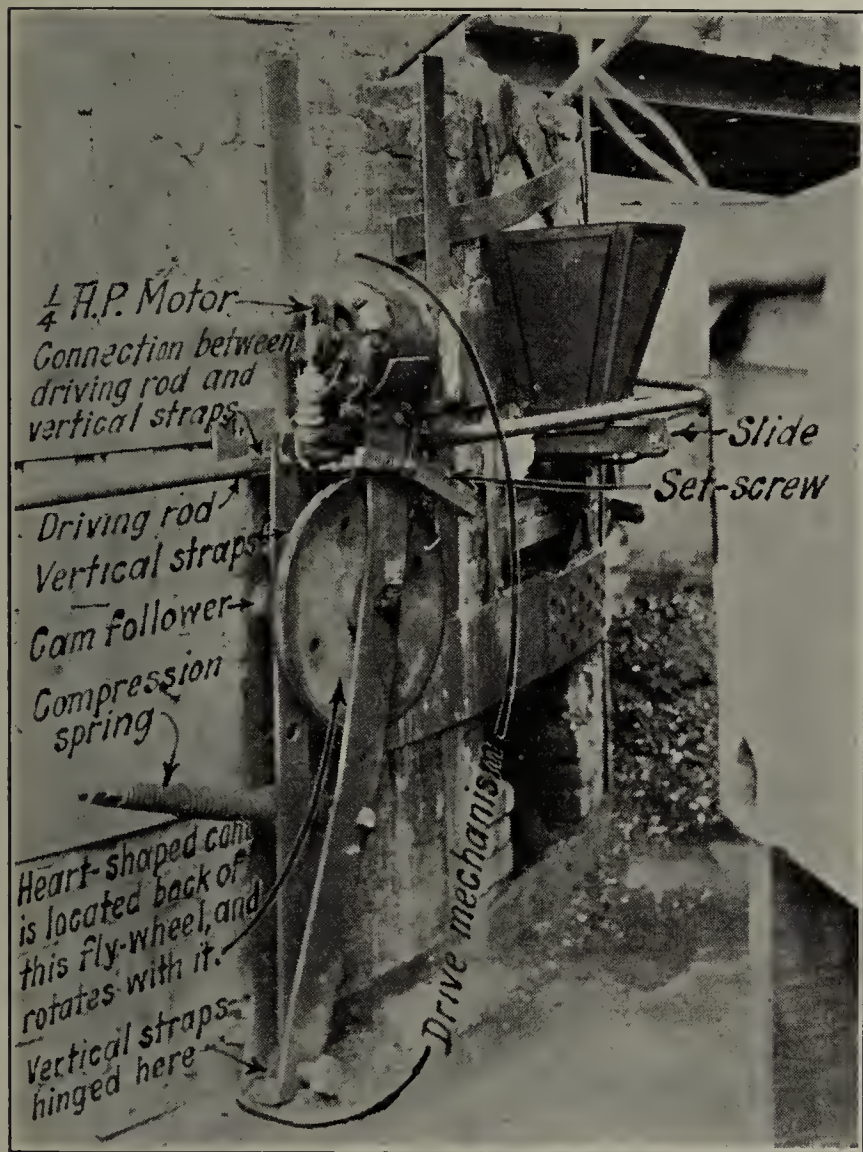
By studying the illustrations you will note that there is a small one-fourth horse-power motor which works a friction clutch rotating a heart-shaped cam, on the edge of which rides the cam-follower. This follower is supported between two upright straps, connected to the driving rod at their upper ends and hinged to their lower ends. The heavy compression spring is seated on these straps. The driving rods extend all the way around the kiln and the slide at each fire box is connected to the driving rods by a series of simple levers so that when the driving rods move every slide does likewise, thereby replenishing the fuel supply. When the drive mechanism is in operation, the cam is rotating slowly, the cam-follower is riding its edge, pressed against it by the force of the compression spring which is all the time fighting for release. When the depression in the cam is presented to the follower, this acts the same as though one of the supports of the vertical straps was suddenly removed, thus allowing the force in the compression spring to act on the vertical straps, throwing

them to the right, and they in turn carrying the driving rods to the right so each slide dumps its little cargo of fuel on the fire below it. This operation takes place with each revolution of the cam, hour after hour from beginning to end of the burn. By turning the set screw, any desired frequency of stoking may be obtained—one, two, three, four minutes or any fraction thereof.

The hoppers hold about fifty pounds of fuel. All the burner has to do is to start the fire and fill the hoppers. The shovel and slice bar are practically obsolete weapons and one fireman is just as efficient as any other.

The one big advantage is that almost any kind of coal that comes out of the mine can be used. You don't need any high priced lump or particular grade of coal. And, besides, there is a saving in the tonnage, labor and percentage of culls.

The grate and the shaker which are furnished as part of



The Gates Automatic Stoker.

the equipment for each fire box match the stoker for simplicity and efficiency.

The coking-plate and grate are hinge-connected, and supported by a series of levers and links which serve as a dumping device. The rear end of the grate is supported on a cross-bar.

Coking-plate and grate, when in position, slope toward the rear of the firebox, the rear of the grate being within an inch or so of the face of the bag-wall. When the dumping device is operated, the coking-plate takes an almost vertical position, and the grate is swung downwards and outwards, creating an opening of about eight inches between rear end of grate and bag-wall. This action of dumping pushes the ash off the rear end of the grate into the ash-pit, after which the coking-plate and grate may be immediately re-set.

The stoker can be installed on any type of kiln—circular or rectangular—and, it is believed, fills a long-felt want in the clay industries.

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



CALIFORNIA IS IN many respects an ideal place for the use of brick, hollow tile, and various forms of clay products in the construction of ordinary residences. Yet the percentage used is nearer a minimum than a maximum is also true. As a matter of fact, the great mass of the common people who build the common homes do not know or consider the possibilities of the use of clay products in their construction. A considerable portion of those who do consider the matter evidently stop very short of conviction as to its feasibility. Yet it would seem that in various parts of this territory, owing to excessive heat at times, to a very dry atmosphere at various times and in various places, tending to make frame structures or any flimsy structure short-lived, the advantage in the use of clay products could well be argued. But so far as it is possible to learn from the secretary of the local manufacturers' association or from any of its members, there is nothing done in the way of general advertising or organized effort to create a public movement in this direction. In this the association is not a typical California product. The music trades, the plumbing dealers, the electric concerns, the various producers' organizations of California all give great attention to the general advertising of their wares and the education of the public in the desirability of their use. The Eastern clay products people seem to be awakening to the value of public education on the subject. In Los Angeles, in fairness be it said, there seems to be some movement in that direction. In the northern part of the state there is yet a great undeveloped field, and meanwhile possible purchasers are giving their patronage to other materials.

Formal announcement has been made that the Pacific Porcelain Ware Company and the Pacific Sanitary Manufacturing Company have consolidated under the name of the Pacific Sanitary Manufacturing Company, with a capitalization of \$2,000,000. Officers of the firm will be N. W. Stern, president; M. E. Wangenheim, vice-president; E. S. Wangenheim, second vice-president; Miss May Blum, secretary. The main office will be retained in the present location. The three plants at Richmond will be consolidated under the management of W. A. Potter. As rapidly as possible their capacity will be doubled.

Oakland, Cal., is on the eve of a great program of construction. In view of this her contractors have met and reviewed the labor situation. It is evidently impossible to use or lay brick without brick layers. The estimates made were that within a short time 200 brick layers will be needed. At present there are in the territory but 80 experts. The cause of this situation is the sudden expansion of building programs, and the fact that for years past scarcely any apprentices have been trained. So they have established a training school, under a professional of 50 years' experience, and hope inside of six months, by a process of intensive training, to produce enough experts to in part relieve the shortage. A couple of the leading brick manufacturers are furnishing the brick for the school free of cost.

George A. Clarke of Porterville, Cal., has opened a clay pit near the line of the Porterville and Northern railroad and is shipping the product to Craycroft & McKnight at Fresno, manufacturers of brick and tile.

Dinuba, Cal., is suffering from a brick shortage. They have depended on the Exeter plant for their supply. The building program has passed all expectations, and that plant is now buried with orders. They have brick to supply for the high schools of the neighboring towns of Porterville,

Reedly and Taft. As a result, some \$200,000 worth of building in Dinuba is being delayed, as contractors hesitate to incur the additional expense of shipping brick from more distant points.

Los Angeles has adopted an ordinance permitting the construction of eight-inch walls, in case of buildings not exceeding 400 square feet of floor space, nor more than twelve feet to top of fire walls. They have also passed an ordinance to prevent the construction of false chimneys and false fireplaces.

The Hidden brickyard near Vancouver, Wash., has reopened for an indefinite period, but will turn out at least one and a half million additional brick, their present supply being exhausted.

The plant of the Washington Brick, Lime and Sewer Pipe Company at Clayton, Wash., has just completed a \$54,000 order of architectural terra cotta for the new \$350,000 administration building of the University of Washington. Victor E. Poilet, vice-president and sales manager, states that they turned out the order in 90 days. They also furnished 44 grotesque figures, twice life size, representing the various crafts and branches of education, which figures will decorate the facade of the new building.

Arthur B. Fosse, president of the Washington Brick, Lime and Sewer Pipe Company, in a recent address to the industrial bureau of the Chamber of Commerce at Spokane, pointed out that tile used in Chinese temples 400 years ago is still in first-class state of preservation. He claims that the Inland Empire Tile Clay is the best known in the United States, and is shipped, from Bismarck on the east, all over the Pacific slope. After 44 different tests, they were awarded the contract for the University of Washington. The annual output of their company alone, he states, would build a wall one foot thick, 10 feet high, and twenty miles long. The sewer pipe they produce would reach from Spokane to beyond Seattle.

C. P. Oudin of the American Fire Brick Company of Spokane, Wash., is author of the statement that while the prices of common and face brick have advanced in most parts of the west, such is not the case in Spokane. Owing to keen competition the prices in Spokane are lower than for some time, and the tendency is downward. The statement made in the circular prepared by the Common Brick Manufacturers' Association that prices of common brick in that territory had been raised two dollars is not corroborated by the statements of individual dealers.

A conference was called at Spokane between shippers and carriers to agree upon freight rates for brick and clay products to be recommended to the Interstate Commerce Commission. Waldo G. Paine of the Spokane and Eastern presided. Among the outsiders who participated was John H. Corbett, representing the Granger Clay Products Company of Yakima.

The American Fire Brick Company of Spokane, Wash., reports many orders for hollow tile to be used in basement walls for residences.

SUNSET.

No. 1,415,906. Interlocking Tile. Vance E. Taylor, St. Louis, Mo., patentee.

An interlocking tile structure comprising tile sections, one of which is provided with an end groove and the other with an end tongue entering into said end groove, each of said tile sections being provided with a plurality of cavities which extend longitudinally through said tile sections, the cavities of one tile section being adapted to register with the cavities of another tile section when said tile sections are placed in juxtaposition, one of the cavities in the tile section having a tongue being located immediately above said tongue and another of said cavities being located immediately below said tongue, and a mortar seal connecting said tile sections together, said mortar seal being interposed between the edges of adjacent tile sections and extending into and entirely filling the end portions of said cavities adjacent to said tongue and groove.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,415,011. Tunnel Kiln. George Hillard Benjamin, New York, N. Y., patentee.

A tunnel oven comprising a main chamber through which goods to be heated can be caused to travel; a heating chamber on each side of the main chamber, but structurally independent of the walls thereof; each heating chamber consisting of an enclosing structure and two structurally independent combustion chambers located therein.

No. 1,415,990. Rotary Kiln. Alexander B. Carstens, Monterey, Mexico, patentee.

A rotary kiln having openings intermediate the ends thereof, means for normally closing said openings during substantially a complete revolution of the kiln to prevent the escape of gases therefrom, and means co-operating with said first-named means to cause a momentary opening of the same and thereby permit material to pass through said openings into the kiln.

No. 1,416,432. Brick Pallet. Leonard G. Woods, Pittsburgh, Pa., patentee.

A pallet for supporting bricks before and during the burning thereof, consisting of a sheet metal plate adapted to receive and support the green bricks, the plate being thinly covered with a closely adherent enamel, whereby to prevent sticking of the brick to the plate and reaction of the metal with the constituents of the brick.

No. 1,416,726. Apparatus for Burning Ceramic Wares. Taine G. McDougal, Flint, Mich., patentee.

That improvement in the art of burning ceramic wares which consists in continuously passing said wares through a kiln having a pre-heating zone, a high-temperature zone and a cooling zone, and maintaining said wares openly exposed to radiation from the under surface of the ceiling of the kiln in the high-temperature zone for a period sufficient to insure thorough burning throughout the whole mass of said wares, said under surface being intensely heated by combustion in the space between it and the wares.

No. 1,416,727. Burning Ceramic Wares. Taine G. McDougal, Flint, Mich., patentee.

In a continuous kiln for burning ceramic wares, a thin, highly refractory carrier forming the support for the wares, supporting means on which the carrier travels through the kiln, the space about said supporting means being filled in with heat insulating material to a level close up to the lower side of the carrier, said supporting means including a highly refractory element projecting through the floor of the kiln on which the carrier directly rests, and with reference to which said carrier is movable.

No. 1,416,919. Clay Building Block. John A. Wickson, Victoria, British Columbia, patentee.

A building block the ends of which are half-lapped in vertical planes and having end shoulders the lap extensions of both ends being toward the same face of the block, each end of each lap extension and each end shoulder having portions removed within the outer faces of the blocks that will form recesses between the ends of adjacent blocks, and that portion of the block on which are the lap extensions having in its midlength a core space through its depth, the dimensions of

which correspond with those of the recesses formed between the ends of adjacent blocks.

No. 1,418,003. Method and Means for Brick Hacking. James B. Ladd, Ardmore, Pa., patentee.

The method of hacking bricks which consists in first clamping the bricks, which have been assembled in long parallel abutted rows with relatively wide spaces between the rows, and moving the rows closer together and depositing said bricks on cars in hacked formation.

No. 1,417,788. Clay-Product Facing Machine. William E. Wilson, Mason City, Iowa, patentee.

In a brick or tile making machine, the combination of a rotatable marking element having means thereon adapted to engage the surface of a moving ribbon or tube of ceramic material, means to cause rotation of said marking element, means for independently moving the ends of said marking element transversely to the direction of its axis and means to permit such movement without disturbing the driving means for the marking element.

No. 1,407,288. Kiln Furnace. Frank M. Harris, Adel, Iowa, patentee.

In a device of the class described, the combination of a kiln having fuel and draft openings with a single integral frame having openings corresponding with said fuel and draft openings, a vertically pivoted door for said fuel opening, a horizontally pivoted auxiliary door inside of said vertically pivoted door, means actuated by opening said vertically pivoted door for swinging the lower edge of said horizontally pivoted door outward.

No. 1,418,168. Building Block. Edwin Preston, Oakland, Cal., patentee.

A hollow building block comprising end and side walls having top and bottom faces, a web parallel to and of the same thickness as said end walls arranged to connect said side walls together whereby a pair of transversely aligned openings are formed in said block, a substantially continuous shoulder formed along each of the upper edges of said openings except the edge defined by said web, the terminating faces of said shoulders being parallel to and in the plane of the adjacent face of said web, and a continuous shoulder extending along the bottom edges of said block spaced from the inner sides of said openings and having its lower face flush with the bottom of said web.

CONCERNING GREEN MORTAR COLOR.

The question is often asked where a good green for cement can be obtained. This is what J. P. Cullen & Son, Janesville, Wisconsin, have just written the Ricketson Mineral Paint Works, Milwaukee, Wis.:

"In reference to the buff and black mortar colors you shipped us for use on the Janesville High School, we wish to advise that the mixture of these two colors to produce the desired green proves very satisfactory and we can get any shade of green required by the use of these colors. The job is under way and must say your colors are giving splendid satisfaction.

"We used these two colors in the erection of St. Patrick's School here, in 1920, and produced a green mortar color similar to what is being used on our present job."

The Ricketson Mineral Paint Works is a well established concern which has been furnishing mortar color to the trade for many years. The firm is known everywhere as "The manufacturers of mortar colors that will not fade," and they take a great deal of pride in living up to that reputation. We are just in receipt of a very interesting circular which is styled "Mother Nature's Permanent Tints." A copy may be had for the asking.

Written for The Clay-Worker.

SEEN IN NEW JERSEY.



THE BUILDING SITUATION throughout the State is unchanged. The heaviest construction is in habitational buildings, with very little in the way of industrial enterprises showing signs of awakening.

This State will be slow to feel the effect of the tax-exemption law, as it has a period yet to run, while our sister State, New York, has already suffered a relapse due to the expiration of the period in which to start the building. These laws produced an artificial boom and in many instances drained the market of supplies that could and would have been used in the swing toward industrial reparation.

It is claimed by some that the commercial building will soon replace residential construction and will cause a different contracting system to come into being, as will different materials and another kind of labor be needed. They claim this movement has been felt for more than a year. When it finally gets into full swing, the demand will be sudden, and one the manufacturers would do well to prepare for.

Records of construction, as compared with a like period of last year, show an increase of nearly 50 per cent in some localities, while in others the comparison is not worthy of noting, as this year's program to date has positively smothered past records. Taking Newark as a center, permits granted show a general average ranging between \$400,000 and \$500,000 each week. There are other weeks recorded where these figures look small, one week during the past month registering over \$1,000,000. The final figures for May, it is expected, will go higher than for any similar period during 1922. Other localities show very heavy habitational construction, with a strong feeling toward a continuation during the summer months and well into the fall, if not the winter.

The quotations that are handed out have various ranges, and one can tell the locality in which there is a demand with a falling reserve. In the northern part, the prices generally are in the neighborhood of \$20, with a tendency toward a rise. It might be found in some parts of the northern section that these prices are a dollar or two less, or they may be even that much higher. In and around Newark the price is about \$21. The reaction in New York is felt here. This price has been shaded to \$20, and in some cases this could be even lowered. The possibility of replenishing stock controls somewhat. Around Trenton, the price asked is very close to \$18, with stock quite plentiful.

Hollow tile is remaining about at its former levels, with some demand felt. Since the strikes have been settled, in some of the plants production has begun to get on its feet again. Dealers are now in a position to supply most any quantity to cover current needs.

Face brick are much in demand. In some instances the quantities may be small, but the quality is what they are after. Many residences are being built with a brick veneer first story and a wood second story, which gives a pleasing appearance. Prices remain between \$35 and \$55, depending on the quality. Darks are the preferred shades, with a slight call for buffs.

The Miner-Edgar Company of Newark, N. J., producers and distributors of high grade clays, intends to expand its business and has arranged a bond issue of \$1,000,000 to be used for general operations and financing. The net assets for this company totals over \$6,000,000.

It is reported that the Thomas Maddock's Sons Company of Trenton, N. J., manufacturers of sanitary ware, is fast approaching capacity production, with orders in hand to insure this rate for quite a period.

The Phillips-Harper Company, Trenton, N. J., has recently reorganized with F. W. Harper as president and treasurer. The company will continue to represent the same manufactures as in the past.

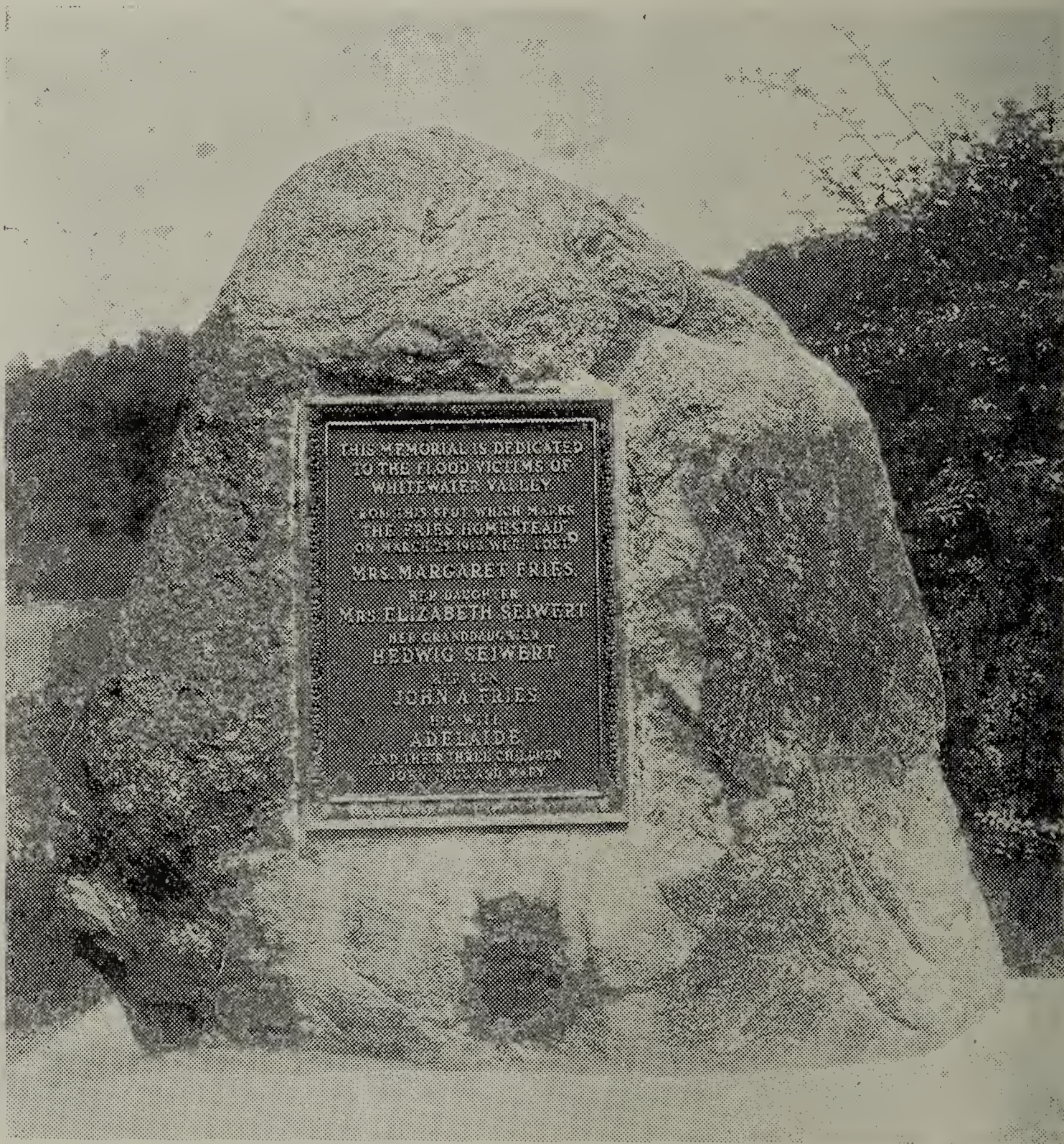
BENTON.

FRIES MEMORIAL DEDICATED.

ON SUNDAY, June 11th, hundreds of automobiles carried parties of friends, relatives and public spirited people to the site of the old Fries homestead near Brookville, Ind., where in 1913 a disastrous flood swept down the Whitewater valley during the night of March 25th, swelling the height of the stream to fourteen feet above the road level and spreading out over the valley, carrying everything before it. Eleven residences were washed away or totally wrecked

dedication ceremonies in memory of the flood victims. Mr. George and Anthony Fries had erected a large red granite boulder six feet high, five feet across and three feet thick in which was embedded a large bronze tablet bearing the inscription:

"This memorial is dedicated to the flood victims of the Whitewater Valley. From this spot which marks 'The Fries Homestead,' on March 25th, 1913, were lost Mrs. Margaret Fries, her daughter, Mrs. Elizabeth Seiwert, her granddaughter, Hedwig Seiwert, her son, John A. Fries, his wife, Adelaide and their three children, John, Paul and Mary."



The Fries Memorial, Brookville, Ind.

and twenty-four others were badly damaged in Brookville alone. Two-thirds of the population of the city, 870 persons were made homeless. Fourteen people were lost in the flood, including eight members of the Fries family, the houses in which they lived, in fact, all the buildings in that vicinity were swept away so that all that remains today is the site of the former homestead and some of the beautiful rose bushes that were spared in some unknown fashion.

Fully two thousand people were present to attend the

The ceremonies in dedication of the memorial were arranged and carried out by the Kiwanis Club of Connersville of which Mr. George Fries is a member. Similar clubs from Richmond, Newcastle and Rushville assisted. Judge Raymond S. Springer, of Connersville, was the principal speaker, although short talks were made by quite a number of very prominent men of Franklin County. The American Legion Band and the Kiwanis Quartette furnished suitable music for the occasion.

In planning the memorial, Mr. Geo. Fries recalled the boulder from the memories of his boyhood days. A visit to the spot where it lay, on the Ertle farm, across the river from the Fries homestead, convinced him that it would constitute a fitting monument to the memory of the flood victims and he accordingly made arrangements to utilize it. Many years ago the boulder served as the natural center of boyhood activities, and it possesses an added sentimental value on that account. Following the flood, the Fries homestead was sold, with the exception of a plot fifty feet square, which was reserved by the surviving members of the family, in memory of the flood victims. The plot formerly was the site of the home of Mrs. Margaret Fries and now forms the site of the memorial. Arrangements are being made for erecting an iron fence around the plot and otherwise adding to the beauty of its appearance.

In the vicinity of the Fries homestead, before the flood, was an industrial center known as "Stave-town." Nothing remains today to mark the place. In 1866 Anthony Fries, father of Geo. M. Fries, established a stave factory there. For many years the manufacture of staves was one of the leading industries of that part of the country. Twenty years later, in 1886, Mr. Fries established a brick factory, which later supplied brick for many of the public and private buildings of that section of the state. The Fayette County Court House, the First National Bank, part of the Connersville school buildings, and many other structures were constructed of brick shipped from "Stave-town."

In 1892, George M. Fries established the drain tile factory west of Connersville, which is now one of the permanent industries of the city. The firm name, A. Fries and Sons, has never been changed, although the father has been dead for a number of years.

Mr. George Fries is president of the Indiana Drain Tile Manufacturers' Association, recently being re-elected to that office for the ninth consecutive time.

COMMON BRICK PRICES IN FIFTY-SEVEN CITIES.

THE WASHINGTON scribe of The Clay-Worker has secured through the United States Census Bureau, the prevailing price for common brick in fifty-seven cities of the United States on May 15.

Pittsburgh	\$16.90	Little Rock	12.50
Cleveland	14.00	Erie, Pa.	15.75
Lorain, Ohio	16.50	Akron, Ohio	13.50
Dayton, Ohio	16.50	Youngstown, Ohio	14.55
Detroit	16.00	Cincinnati	18.00
Pontiac, Mich.	14.40	Chicago	11.00
Bay City, Mich.	14.00	Cedar Rapids, Iowa ...	14.90
Saginaw, Mich.	12.00	Waterloo, Iowa	14.90
Flint, Mich.	14.50	Council Bluffs, Iowa...	17.50
Benton Harbor	14.50	Tucson, Ariz.	10.00
Indianapolis, Ind.	16.00	San Diego	18.00
Milwaukee	12.00	Pasadena	17.00
Boston	17.00	San Jose	16.00
Fitchburg, Mass.	21.00	San Francisco	15.50
Haverhill	20.00	Sacramento	19.00
Fall River	18.50	Spokane, Wash.	14.25
New London	17.00	Seattle	14.00
Syracuse, N. Y.	18.00	Bellingham	12.00
Rochester	17.50	Philadelphia	19.00
Niagara Falls	17.50	Scranton	18.00
Buffalo.....	17.00	Reading	17.00
Poughkeepsie	18.00	Wilmington, Del.	17.00
Newark, N. J.	15.65	Baltimore	17.00
Camden	20.00	Fairmont	21.00
Columbia, S. C.	10.50	Nashville	12.00
Savannah, Ga.	13.50	St. Louis	14.00
San Antonio	16.00	Kansas City	16.50
Dallas	11.15	Duluth	14.50
Shreveport, La.	16.00	Grand Forks	14.00

Written for The Clay-Worker.

IN THE PHILADELPHIA BRICK MARKET.



houses each year.

So far this year more than \$19,000,000 has been invested in dwelling construction. This amount accounted for 3,979 houses. The majority of them are of brick, two-story, and of air-lite construction. It was reported in building circles that dwelling construction would take a sharp drop because of the scarcity of building materials, but such does not seem to be the case.

The demand for brick is tremendous. Cases are numerous in this city at this time where builders so anxious for brick have practically demanded that the manufacturers deliver loads of brick as soon as they come out of the kilns, and it is a common sight to see a load of bricks delivered that are still very hot. The manufacturers declare that this is a very good year, compared to other years, and while dwelling construction is making very great calls on their stocks, and they still find it possible to fill orders that have been taken, they refuse to receive any more orders, with a definite promise of delivery date. Prices have jumped slightly, and some builders are finding it hard to match bricks for jobs already started.

While the estimated cost of operations launched during May, totaling \$8,872,050, is less than that of the preceding month, with its record of \$11,363,610, the discrepancy is due to the fact that in April several large building operations, like that of the sixteen-story Fox Theater Building at Sixteenth and Market streets, and the fifteen-story 500-room Sylvania Hotel at Juniper and Locust streets, were included.

According to Hampton J. Moore, Mayor of Philadelphia, nearly \$5,000,000 in contracts for public works and improvements was awarded by the city last month. He said that thousands of men have been given employment through the making of these contracts, and that the heaviest awards have been made for transit facilities in connection with the completion of the Frankford Elevated.

The labor situation is not an easy one to cope with at this time. Builders of all classes of construction report an acute shortage, but it is likely that this shortage will be relieved in the near future. Some builders report that they have received requests from out-of-town labor for jobs.

Contract for two large office buildings have just been awarded. Workmen have begun the demolition of several properties at Juniper and Walnut streets to make way for the erection of an eighteen-story office building, which will, when completed, represent an investment of close to \$4,000,000. The lot has a frontage of 78 ft. 4 ins., with a depth along Juniper street to Sansom street of 230 ft.

The Jefferson Building is to be erected at 1015-17-19 Chestnut street, which will be fifteen stories high, and cost about \$2,500,000. The contract was awarded to the P. H. Kelly Construction Company, which reports that this contract brings its business so far this year up to more than \$7,000,000.

The erection of a twelve-story office building at Sixteenth and Walnut streets will get under way soon. The building will be of brick, steel and concrete, of fireproof construction, 40x150 ft. It will be erected for Heymann Brothers, realtors, and the plans were prepared by LeRoy B. Rothschild, architect.

Garage construction in Philadelphia is very active. One large dwelling operation builder when selling an operation announced that he would build garages of concrete block construction for \$300. When the time came for building them, he backed out. An enterprising small builder came along and said that he would build brick garages for the amount that the operative builder had said, and as a consequence what would have been 25 concrete block garages are now 25 brick garages.

A. QUAKER.

Written for The Clay-Worker.

WISCONSIN AND MILWAUKEE BRICK AND BUILDING NEWS.



WITH BUILDING operations booming, as summer temperatures warm up home and public building campaigns, Milwaukee brick manufacturers and jobbers report the receipt of an unusually large number of orders. The total volume of brick orders this year exceeds that of 1921 by a wide margin. It is true that no really large jobs feature the city or the state building programs; nevertheless, the general run of a goodly number of small residence and minor building orders swells the average to the point where, in the estimation of Wisconsin brickmen, it has never previously reached. In other words, this season, so far as all dealers in clay products in Wisconsin are concerned, is a banner year and all are justly enthusiastic. Ideal weather conditions have aided greatly in the building campaigns of Milwaukee and other Wisconsin cities. Unhampered by any depressing periods of idleness, construction work in all sections of the state has progressed by leaps and bounds and building permit records in the majority of cities have been shattered by the early season drive of eager home-builders.

Milwaukee above all other Wisconsin cities shows the greatest increase. The report for the first five months of this year was recently compiled by Milwaukee Building Inspector W. D. Harper, who announced that the increase of the first five months of 1922 over the same period in the preceding year totalled \$4,000,000.

A building program \$4,000,000 larger than its predecessor, and the building season just beginning to hit its stride. It is little wonder why Wisconsin clay products dealers and manufacturers are elated and make the modest assertion that business might be classed as booming. In Milwaukee alone, the number of building permits issued to date amount to 13,266, with a valuation of \$12,307,675, while the record for the same period in 1921 was 11,449 permits, valued at \$8,979,354.

Building Inspector Harper's statistics show that with the exception of January, the increase each month of this year has been larger than the same month in 1921, showing that the building boom is universal and is not due to a padded spurt of several large edifices.

Tom Dever, of the Ricketson & Schwartz Co., prominent Milwaukee jobbers, who keeps a watchful eye on the trend and tendencies of the Milwaukee brick market, declared that never before, in his experience, had he seen such a large number of brick and terra cotta residences. The new list of building permits also bears out his observation by showing an unusually high average of brick homes. The brick residence is rapidly coming into favor again in Wisconsin, the lumber state. Whether this is due to the home-builders' fondness for a warm winter home and a cool summer dwelling is a matter of conjecture. The quality of permanency also appeals to the average business man home builder and this theory is advanced in explanation of its marvelous return to popular favor.

Unlike the brick manufacturers of Detroit and other cities, Wisconsin owners have not been disturbed by strikes or similar labor troubles. All work has progressed smoothly and the average output of plants has been maintained and in many cases increased to meet the demands of an active trade. The price of brick in Milwaukee has remained unchanged and is now at an acceptable level, according to the sentiment of the

trade. There is a general good feeling among the trade and a confidence in the market, for few building projects have been reported postponed.

Brick and tile plants in all parts of the state are opened and working at capacity. The Marshfield Brick & Tile Co., Marshfield, Wis., has orders booked for brick that will keep it busy running full time at capacity for six months. A 1,000,000 brick order for immediate delivery had to be cancelled last week because of the six-months future booking. The company is hampered somewhat by lack of proper machinery that has been delayed in shipment from working its tract of 800 acres that will furnish material for 3,000,000 brick per acre. A new draft burning system has recently been installed at the Marshfield plant and an electrical propelled excavating shovel has been purchased. The company is furthering plans for making its plant one of the most modern and completely equipped plants in Wisconsin.

The Waupaca Brick Company, Waupaca, Wis., through General Manager Gmeiner, reports its plant working at capacity with orders booked for three months ahead. The Janesville Brick Works, Janesville, Wis., has opened for the season and is working at capacity. Over a carload of bricks are shipped daily from the company's plant. Throughout Wisconsin each day finds building operations renewed, with greater activity and all brick plants working at capacity to meet the demands of the trade. Nineteen twenty-two cannot be classed other than a prosperous year for clay-products workers.

Articles of incorporation have been filed by the Milwaukee West Brick Co., Milwaukee, Wis., capitalized at \$50,000. Incorporators are William Walderon, Emil A. Oestretcher and Charles Koth, all of Milwaukee.

The Barton Brick Company, near West Bend, Wis., recently celebrated its tenth anniversary. The company was organized in the spring of 1912 and produced what is known to its trade in Wisconsin and central states as the Acme brick. The company grew rapidly and expanded and now, with its battery of hydraulic presses and other machinery developed by the company, it boasts of a 30,000,000 annual brick production. E. G. Toepfer is president of the company. A. BADGER.

THE A. S. T. M. MEETS IN JUNE.

The twenty-fifth annual meeting of the American Society for Testing Materials is to be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., June 26-30, 1922. The advance program shows a number of reports of particular interest to the clayworking industry. Ira H. Woolson, chairman of Committee C-5 on Fire-proofing, will submit his reports and recommendations. Report of Committee C-4 on Clay and Cement sewer pipe will be made by Rudolph Hering, who will report progress in this work. W. A. Hull, chairman of Committee C-10 on Hollow Building Tile. T. R. Lawson, chairman of Committee C-3 on brick, will report the progress made by his committee. R. C. Purdy, chairman of Committee C-8, will report on refractories. Most of these reports are scheduled for Friday, June 30. Those desiring program and further details of the coming gathering should make inquiry of the headquarters of the American Society for Testing Materials, 1315 Spruce street, Philadelphia.

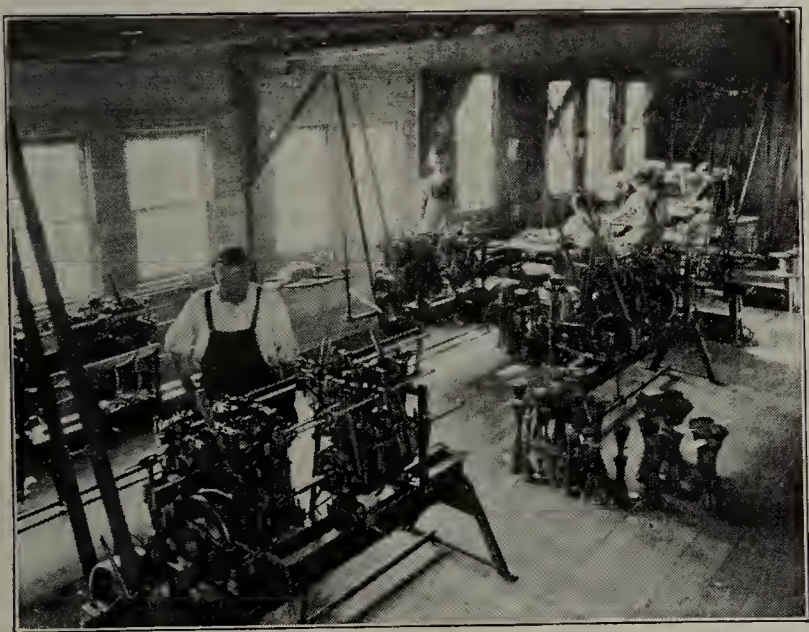
"Labor must be liquidated" says an employer. Yes, but how are you going to do it with all these prohibition enforcement officers snooping around?

What we are wondering about is why they couldn't give the soldier boys their bonus without making it so unpopular, by continually reminding us of what it is going to cost in the way of taxes.

IMPORTANT CHANGE IN CUTTING TABLE WIRE BUSINESS.

THE MITTLER WIRE MFG. CO., Robbins, Tenn., because of the death of Mr. P. Mittler, has been purchased by the Manufacturer's Equipment Co. of Dayton, Ohio, who have removed all the machinery, wire stock and finished cutting wires to their factory in Dayton. Mr. Mittler was a mechanical genius of the first magnitude and his service to the industry was most highly appreciated. The automatic power machines used by him were the product of his own inventive brain and were completely made by the skill of his own hands. These machines are simply marvels of ingenuity and embrace almost every known mechanical movement, and are really human in many of them.

These machines were designed and built without drawings and with but few tools. As the design of each separate part originated in his mind, it was immediately executed by the skill of his hands, until the finished machine became a perfectly and synchronously moving mechanism, producing the best and most perfect cutting wires the industry ever knew,



Machines Making Cutting Table Wires.

and thus Mr. Mittler became a true benefactor in the great field of clay working, though this fact he never knew. Fate has long decreed that living men should never know how the public mind was pleased to regard them. After death a memorial is erected to their deeds and memory, or they are forgotten without prejudice.

The good and the service that was being done by Mr. Mittler shall live and continue, as all these wonderful wire-making machines are now in the factory of the Manufacturers' Equipment Co., who will, to the limit of their ability and without stint, endeavor to give a better service to the industry than was formerly enjoyed. It shall be the continued aim of "Meco" to maintain the established high standard in cutting wires, and also supply the industry with them at prices commensurate with the cost of material, power and labor necessary for their production.

"Meco" will continue the use and operation of the semi-automatic wire-making machines of their own design and make. These machines have in the past years furnished millions of cutting wires to the trade. It is anticipated that in time the "Meco" shops will produce all the cutting wires used in the United States, as they propose to make the wires of such high quality and the price so low that none will think

of buying cutting wires elsewhere. The photographic view shown herewith gives some idea of the productive force of these machines. On page 701 in this issue of The Clay-Worker will be found an "ad" directing how and where to buy "Mittler" and "Meco" cutting wires.

Written for THE CLAY-WORKER.

OHIO CLAY NOTES.



ALTHOUGH THERE HAS been no increase in price as yet, paving brick prices will be advanced unless the fuel situation improves soon. This was the statement of officials of the Metropolitan Paving Brick Company this week. The demand for paving brick is strong and due to the lateness of the season which brick manufacturers say is from five to six weeks tardy the industry will be active later than usual this year.

It is announced that the Metropolitan Paving Brick Company began operation this week at its Imperial plant, closed down since April, when two other plants of the company were suspended because of the fuel situation.

The freight situation in this section is very satisfactory and shipments are going forward on time. Officials of the company said this week that municipal, county and state construction was at peak this summer.

Idle for two years, The Dennison Fire Clay and Brick Company's plant, one and a half miles east of Dennison, resumed operations recently under a change of ownership. The products of the plant are brick. John Scott Midvale, one of the two new owners of the Union plant, expects to convert the two large kilns, each of 250,000 brick capacity, into eight smaller kilns each to have a capacity of 60,000 bricks. In addition to the two large kilns at the plant there are two smaller ones of 75,000 brick capacity.

Walter Moore, Urichsville, formerly superintendent of the Diamond Sewer Pipe works of the American Sewer Pipe Company and of the Royal plant, at Midvale, of the Robinson Clay Products Company, is the owner of the plant. Scott and Moore purchased the plant from C. A. Albaugh, Cleveland, trustee for creditors, who had purchased it from Roy Cummings, trustee in bankruptcy.

The Finzer Brothers Clay Company, at Sugar Creek, made its largest output of face brick during the month of May. One hundred and seven carloads of brick, aggregating 1,305,000 brick were shipped. Marketed were 21 cars of surplus coal.

Shipments went east as far as Long Island and north as far as Michigan. The bulk of the shipments went to points in northern Ohio and western Pennsylvania.

The H. C. Schneider Sewer Pipe Company's plant at Goshen, three miles from here, has been purchased by William Greif, vice president of the United Banking and Savings Company of Cleveland, preparatory to be taken over by a company to be incorporated, in which S. P. Meyers and S. O. McFall of Urichsville Sewer Pipe Company are leading officials. The purchase price was \$146,000 for the plant and clay fields. The plant's last units have not been completed although the plant has been in operation for 18 months with kilns and modern machinery in operation. Work on the plant was started in 1918. It is one of the most modern equipped and active plants in the Tuscarawas clay district. Mr. Schneider retains his coal mines and fields in Tuscarawas, Harrison, Noble and Washington counties.

The Continental Clay Company of this city has resumed operations at its plant in Saliveville, Ohio, according to word from that place. The plant has been idle for five months and a half, and 35 men are now being employed.

BUCKEYE.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF 'CLAY-WORKER'.

The Clay-Worker a Very Necessary Factor.

My Dear Mr. Randall:

Since I have for a period of more than five years been disassociated with the activities of the baked mud business, it is not surprising that I have, in a measure, lost my interest in it. To tell the truth, I had almost persuaded myself that I could live without the regular visits of my old friend, The Clay-Worker.

However, after due deliberation I have arrived at the conclusion that life without The Clay-Worker would be but a mere measly existence comparable to being marooned in the wilds of Arkansas for life without the benefit of electric lights, free rural delivery, telephones, hard roads or tin Lizzies.

So here's your two dollars.

Sincerely,

Albion, Ill.

WALTER COYLER.

In Favor of Lug Brick.

My Dear Mr. Randall:

I have for a number of years endeavored to keep in close touch with the activities of the Paving Brick Industry and as to the pleasure of paving engineers regarding types of brick and designs for brick pavements, in order that I might be of service to both parties.

I have probably been more concerned about the engineer's view point than that of the manufacturer, because, I believe it is good business to please the "buyer," provided, it will not reflect on the merits of the material after a few years of service, and further, I believe that such a policy is being adhered to by the producers and manufacturers of other materials used in pavements to a greater extent than it is the paving brick industry, as you may recall the activities of the industry during the past twenty-five years, in promoting different styles of brick and designs for brick pavements.

It is questionable whether the personal opinion of those who are more or less financially interested in the brick industry should govern in deciding styles in paving brick, when it is known generally that engineers favor a different style of brick.

Promotion, advertising and salesmanship can accomplish a great deal to advance the sale of an article for a certain length of time, but if it is lacking in real merit, there will be a reaction.

The question may be asked as to whether lugless brick have the technical and economical advantages to justify their use in place of a brick with lugs, when a bituminous filler is used?

It is admitted by the advocates of lugless brick that joint spacing for the filler is necessary, but they contend that the kiln marks will provide the necessary spacing.

Paving engineers realize that uniformity in the materials used is the important factor in securing pavements that are satisfactory. A bituminous filler for brick pavements has merit if it functions properly, which means, that it should penetrate the joints between the brick to waterproof the foundation, provide for temperature stresses and to protect the edges of the brick.

What manufacturer of paving brick will guarantee his product to be kiln-marked in such a manner as to accomplish the result desired?

Why are the manufacturers of paving brick not willing to furnish engineers with brick having small lugs and the ends double-beveled to provide uniformity in spacing?

The answer may be that it is harder to sell the off grade brick, but from my observations of lugless brick pavements, together with official reports from engineers who are giving the matter careful consideration, I am thoroughly convinced that the paving brick industry is making a serious mistake in its present policy of recommending the lugless type of brick.

I might add in conclusion, that I appreciate the trying business conditions in the industry during the past few years and that I have received the most courteous treatment from the manufacturers. And in advocating to them and engineers the use of brick with small lugs I believe I am doing a service that will, in time, be appreciated.

With kindest regards, I beg to remain,

Yours very truly,

JAS. C. TRAVILLA,

Consulting Engineer.

Richmond, Virginia, Invites the N. B. M. A. to Hold Convention There.

Dear Mr. Randall:

We are in receipt of your favor advising that Mr. Dabney, business manager of our local Chamber of Commerce, has extended an invitation to consider Richmond in planning for the next national convention of brick manufacturers. We wish to extend our personal invitation as one of the local brick manufacturers.

We inclose herewith our check for \$2.00, covering subscription for one year for The Clay-Worker.

There has been a rush of building in this section this year and local yards have been unable to turn out brick fast enough to supply the demand. This is partly due, however, to the main building season covering only about five months. Common brick is now bringing an average of about \$15.00 f. o. b. Richmond, Va., or about \$12.00 to \$12.50 f. o. b. plant. Bricklayers are getting \$1.25 per hour with contractors bidding against one another for them which in some instances has run the rate up to \$11.00 per day.

Yours very truly,

BURROUGHS & MANKIN, INC.,

E. T. Mankin, President.

Richmond, Va., June 6, 1922.

Something New in Clay Products.

Editor The Clay-Worker:

We have invented, patented, and are now manufacturing an entirely new clay product which I believe will be of great interest to clay manufacturers, especially hollow ware makers.

This is a clay stucco base or clay lath, to be used in new stucco construction, or an overcoat application of stucco over old buildings.

Everybody knows the adherence which stucco has when applied upon clay tile, which is by far the best base, and this base is practically the same.

The clay base or lath which we are manufacturing is a slab 8 in. by 12 in. and $\frac{5}{8}$ in. thick. In forming these slabs we make an 8 in. by 8 in. square block 12 in. long, the corners being cut partially before the clay leaves the die. The clay column then passes through a perforating machine which makes the nail holes in all four sides. The clay then is handled on a regular clay cutter where it is cut into lengths 12 in. long, in same manner as drain tile or hollow blocks.

The block then goes through the processes of drying and

burning, and after being burned a slight jar on the corner of the block breaks the remaining part of the corners which were not cut in the process of making, and leaves four perfect slabs which are used as lath.

This is the only process we know of by which a clay slab can be produced cheaply, and does not warp during the processes of drying and burning.

This stucco base or lath will have a great advantage over wood lath, metal lath, or other devices or bases upon which stucco is now being applied.

This clay lath being of a mineral origin the same as the material used in the manufacture of stucco, will have practically the same expansion and contraction due to climatic conditions which the use of clay blocks for stucco proves.

This clay product can be manufactured in any clay plant and by the same machinery used to manufacture drain tile or hollow blocks, the only addition being a die for this block and a perforating machine. No extra labor is necessary whatever.

We intend to license the manufacture of these lath at a very reasonable royalty fee, for we would like to see this taken up and made a success of by clay manufacturers all over the country, as in this way it would save a great transportation expense which would be the case if long shipments of this material were made at the prevailing freight rates. We also think that this will be a great benefit to the clay industry in general as it will open up a new outlet for manufactured clay.

We have just started to manufacture these lath, it being in an experimental stage for the last two months as it was necessary to eliminate several weak points which we had to contend with. We are manufacturing these from a common red burning clay, but I think that shale would make even a better product than one produced from a common clay as it could be made much lighter.

The name which we have given these lath is Perma-Tile Stucco Base or Clay Lath.

We have taken photographs of several houses covered with this material, also some views around our plant, copies of which we should be glad to send you if you care for them.

We wish to do some advertising in The Clay-Worker and will try and get some sort of a line up to you for your next issue.

We would like to hear from you stating your advertising rates, also I would like your opinion as to the merits or possibilities of this product,

Very truly yours,

RICHHOLT BROS.,

Per C. E. Richholt.

TREASURER SIBLEY ENTHUSIASTIC OVER BRICK AND BUILDING CONDITIONS IN SOUTH.

"If any one is still skeptical about the return of prosperity in the commercial world, just let him take a trip through the state of Florida," said John W. Sibley, general sales manager of the Birmingham Clay Products Company, who has just returned from a tour of the land of sunshine and flowers, in an interview recently in the Birmingham Age-Herald.

Mr. Sibley first visited Tampa, where his company's general state agent, W. R. Fuller, makes his headquarters. Mr. Sibley said: "Tampa is a very progressive city and bids fair to be the great metropolis of the gulf coast cities. They will shortly issue \$1,000,000 of bonds for municipally owned dock and port facilities, which when completed will enable them to handle shipments of steel, iron, coal and clay products from Warrior river points and supply a return cargo of fruits, vegetables and phosphate rock, thus making closer and more

mutually beneficial the commercial ties with the Birmingham district.

"It may surprise you to learn," said Mr. Sibley, "that Birmingham face brick shipments to the Tampa district, including St. Petersburg, last year were next largest to the shipments to the home market at Birmingham, even greater than Atlanta, which has always been a large consumer of Birmingham clay products."

Mr. Sibley toured Florida in Mr. Fuller's automobile, riding over several hundred miles of splendid roads paved with brick made in the Birmingham district, which are in fine condition, though many of them are over 15 years old.

"Florida had great fruit and vegetable crops this year, with good prices," said Mr. Sibley, "and the whole country is full of wealth. Everywhere the mason and carpenter is busy and the greatest era of building construction ever known is in full swing.

"The same is true of permanent highway construction, which after all is the real basis of the great strides made by Florida in recent years, and is an incontrovertible testimony to their foresight and courage."

Mr. Sibley also stopped at several points in Georgia on his return trip, where, he says, the same degree of building activities prevail, and on his arrival home was pleased to find the April orders exceeded in volume any month since the armistice was signed, all the brick plants now running 100 per cent, with steadily increasing demand. In his opinion, this is a safe barometer of general business conditions and prosperity is no longer "just around the corner," but is staring us in the face.

GEORGIA PLANT WINS IN FREIGHT RATE CASE.

The Standard Brick Company of Macon has been victorious in its fight against freight rates on hollow building blocks, according to a tentative report received from Examiner J. H. Howell of the Interstate Commerce Commission. Manager Ben Gilham of the traffic department of the Macon Chamber of Commerce represented the brick company at the rate hearing, which was held in January.

The company complained of discrimination as to rates on Dennison interlocking building blocks, manufactured by the company, as compared with rates from other points. The report of Examiner Howell recommended that the commission declare rates on blocks from Columbus, Ga., to Jacksonville, Fla., prejudicial to Macon interests and that rates on the so-called Dennison blocks could not be different from rates applicable to other types of building blocks. The examiner held that inasmuch as brick rates were being adjusted under a previous order of the commission, effective July 12, no order was necessary in the building block case.

BURNED CLAY PRIZES TO BE OFFERED AT MISSOURI STATE FAIR.

The W. S. Dickey Clay Manufacturing Company of Kansas City has announced that it will donate a 12x136-ft. Dickey Vitrified Salt Glazed Hollow Tile Silo, complete with tile roof and chute, as a capital prize to be awarded to the owner of the cow winning the dairy cow race at the Missouri State Fair, Sedalia, August 19 to 26. The cow race is a production contest between Jerseys and Holsteins and is held during fair week. Besides the silo there will be \$1,000 in money offered as prizes, and such dairy equipment as churns and cream separators. The race will be under the management of E. G. Bennett, state dairy commissioner. Tests will be made and the records of the contest kept by the dairy husbandry department of the University of Missouri.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



HERE HAS BEEN a brisk picking up in building operations in Evansville and other towns and cities in southern Indiana during the past month and indications point to a great deal of building during the month of June, and in fact during the balance of the summer. The building permits in Evansville showed a big increase in May over the month of April and the value of the permits was larger than during the corresponding month of last year. A great many brick residences have been started in Evansville and other towns in that section, and a good many more have been planned for the summer months. Brick manufacturers are busy and some of the plants are being operated at full capacity. The Standard Brick Manufacturing Company at Evansville report that they have a large number of orders from out of town and that they expect to do a much larger volume of trade this year than last. Business conditions are gradually getting better and collections have improved a whole lot since the first of the year.

Henry C. Kleyemeyer, president of the Standard Brick Manufacturing Company and president of the Chamber of Commerce of Evansville, has been chosen as one of the members of the board of trustees of the soldiers' and sailors' memorial coliseum at Evansville to take the place of the late Benjamin Bosse, mayor of that city. Mr. Kleyemeyer, although a very busy man, says he will find time to look after his new duties.

The Mt. Vernon Star, at Mt. Vernon, Ind., published a story in one of its recent issues that started off like this: "Wanted—Some one to make 200,000 brick in Mt. Vernon." The article went on to say that the man or men who would establish themselves in Mt. Vernon for the purpose of manufacturing brick will be given a portion of the equipment free of charge, the only consideration being that of a guarantee that brick will be manufactured there. The paper said that the man who had authorized the proposition had made it in good faith and that he was ready to back it up. At the present time all the brick that are used for construction and other work in Mt. Vernon are shipped in there from other points and the Star thinks that a brick plant, once established in that city, would prove to be a paying institution. The Star thinks that a number of men might be interested to know of the offer the city has made in order to induce some brick manufacturer to locate there.

John Andres, secretary of the Standard Brick Manufacturing Company at Evansville, reported the other day that sales are away ahead of the ability to produce, explaining this condition, however, was partly due to the fact that the power plant of the Southern Indiana Gas and Electric Company at Evansville recently broke down and this caused the shutting off or the curtailment of power in many of the manufacturing plants of Evansville. Mr. Andres believes that the brick manufacturers during the rest of the season will have about all the business that they can properly take care of.

A good many farmers in southern Indiana, southern Illinois and western and northern Kentucky are arranging to tile their land this season. Some of the farms in the tri-state section have been made more valuable during the last few years by the liberal use of tile and in some instances the values have more than doubled after the tiling was done. This is especially true of Spencer County, a few miles east of the city of Evansville. A few years ago the land in what is known as the "Willow Pond" was practically without value. It was

tiled and now the best land there could not be purchased for \$200 an acre.

Aaron M. Weil, head of one of the potteries in Evansville, accompanied by his wife, will go to Atlantic City in a short time to spend the heated season.

L. A. Folsom, brick manufacturer at Boonville, who was a business visitor in Evansville a few days ago, reported that the brick manufacturers of that city are busy now and that he is looking for a good trade the balance of the year.

The pottery plants of Evansville are being operated steadily and a better volume of trade is looked for this year than last. The pottery manufacturers believe that the reduction in freight rates ordered by the Interstate Commerce Commission will have a tendency to greatly stimulate business all over the country.

A. HOOSIER.

CANTON DISTRICT BUSY.

Production of building brick continues at peak in the Canton district, according to Paul B. Belden, secretary and general manager of the Belden Brick Company, largest distributors of brick in this section of the country, writes our Canton scribe. Discussing the situation locally Mr. Belden said, "Demand for building brick continues and the price is strengthening, the product having advanced the past month from ten to fifteen per cent. The reduction of ten per cent in freight rates effective July 1, will have a decided effect on the brick industry and should stimulate it to a considerable extent."

Activity at all plants of the Belden Company has been interrupted to some extent by the inability to get coal, but the larger plants have been operating at capacity.

According to Mr. Belden the brick business is still good and prospects for the future are most encouraging. He says there seems to be no let up in the building of homes which at the present time is the greatest in many years.

He blames the increase in brick prices to the raise in coal cost, and labor wage increases. Laborers are demanding 40 cents an hour at most plants and manufacturers have trouble in enlisting laborers even at this price.

THWING RADIATION PYROMETERS.

Dr. Thwing, head of the Thwing Instrument Co., Philadelphia, was a pioneer in developing indicating and recording radiation pyrometers, and has made a careful study of the subject, covering quite a number of years, so it is not surprising that the bulletins issued by the Thwing Instrument Company contain valuable information on correct temperature control. Their bulletin No. 11 gives fourteen pages of interesting matter pertaining to the installation, use and advantages of the Thwing high duty radiation pyrometers.

A NEW AUTO-BRIK BULLETIN.

The Lancaster Iron Works, Inc., Lancaster, Pa., has published some excellent bulletins, describing and illustrating their products. Number 10, the latest bulletin, is devoted for the most part to their Auto-Brik Machine, but a few pages are given over to their "Arnold-Creagor" S. S. S. Brick Machine, the "Martin" Style "A," and the "Martin" Style "B." Two splendid illustrations show the Auto-Brik machine at different angles, so the construction and operation of same may be readily noted. Some of the headings for the subject matter, which is well handled, of this bulletin, are "The Reason for the Auto-Brik Machine," "Increased Capacity," "Less Cost," "Better Brick," "Example of Increased Capacity," "Example of Better Brick," "Example of Less Cost." Would advise any one interested in brick machinery to write the Lancaster Iron Works for their latest bulletins.

OBITUARY.

Frank L. Stiles, Leading Brick Manufacturer of New England,
Answers the Final Summons.

THE BRICK MANUFACTURERS of New England, and of the whole nation, for that matter, mourn the death of Frank L. Stiles, which occurred Friday, June 9, at his home in North Haven, Conn., after a very brief illness. The initial cause was stomach trouble. Complications followed which made an operation necessary from which he failed to recover. He was buried June 13 with Masonic honors. His death is an irretrievable loss to the brickmaking fraternity and to his neighbors and business associates of New Haven, where he had been a leading figure for a half century, as had his father before him. His widow alone survives.

In the early years of the National Brick Manufacturers' Association Mr. and Mrs. Stiles always took an active part in N. B. M. A. affairs. His father was a charter member and at his death Frank took his place in the membership ranks. He was a modest man and would not willingly play a leading role, but gave of his knowledge and experience freely. For a number of years he has spent his winters in California. On his return home in May he seemed to be the picture of health.



Frank L. Stiles.

Mr. Stiles was president and treasurer of the I. L. Stiles & Sons Brick Company, president and treasurer of the North Haven Brick Company, president of the Stiles & Reynolds Brick Company, located in Berlin, Conn., and president and treasurer of the Stiles & Hart Brick Company, at Taunton, Mass., and also of the Bridgewater Brick Company, of Bridgewater, Mass. He was a 32nd Degree Mason, a Shriner, a member of the Union League, the Elks Club of New Haven, and a number of other societies and organizations. His kindly, genial nature made him very popular with all who knew him. Though he had reached the age of sixty-eight, his death seems untimely.

"There is no death! What seems so is transition:
This life of mortal breath
Is but a suburb of the life elysian,
Whose portal we call Death."

DEATH OF INDIANA DRAIN TILE MAN.

Henry Brinkmann, 97 years old, one of the oldest tile manufacturers in southern Indiana, died at his home at Mt. Vernon, Ind., on June 1. His death was due to the infirmities of age. Up to six months before his death Mr. Brinkmann was actively engaged in business. For many years he

operated the Brinkmann Clay Tile factory at Mt. Vernon and until a year ago he visited the factory, a mile north of Mt. Vernon, practically every work day in the year. He was widely known to the trade and had built up a reputation for honest and fair dealing with his fellow men. In addition to the tile factory, Mr. Brinkmann had several other business interests in the city of Mt. Vernon. For many years Mr. Brinkmann was one of the directors of the Mt. Vernon National Bank and he served several terms in the Mt. Vernon City Council. In politics he was a Republican but had many friends in the opposing party, who admired him for his sterling worth. He was a member of the Masonic lodge and the Trinity Evangelical Church at Mt. Vernon. Mr. Brinkmann was a native of Germany and in 1852 married Miss Margaret Hahn in Germany. His wife died a good many years ago. Ten children were born to the couple, six of whom survive.

PASSING OF A VETERAN OF '64.

The last of its kind, a generation-old brick machine, passed into the discard recently when Mr. John S. Pardee, Philadelphia, replaced a Chambers machine which had been in use for more than fifty years. Mr. Pardee referred to it as his "old soldier." It was the last of that type of machine, so far as Chambers Brothers Company know. The machine had been in continuous use since 1864, making about ninety brick per minute. Recently some careless workman filled it up with dry clay and stuff shoveled up from around the machine house, and the result was a wreck. The "old soldier" was too feeble to withstand that sort of feed. It has been replaced by a new Chambers machine of modern type, which it is hoped will in turn run for a half century or more.

AMERICAN CERAMIC SOCIETY ACTIVITIES.

The current issue of the Journal of the American Ceramic Society announces the mid-summer meeting or excursion, which will occur August 14th to 19th. The cities of Toronto, Hamilton, Montreal, Kingston and Quebec will be visited. Full particulars will be announced subsequently.

Announcement is also made that the Twenty-fifth Annual Convention of the American Ceramic Society will be held at Pittsburgh, Pa., February 12 to 19, 1923.

The trip to Europe has been postponed until 1923, due to the small number that could go this year.

Sixty-nine associate members were elevated to active membership in the Society by the Board of Trustees at their April meeting. Among the number is the junior editor of The Clay-Worker, James E. Randall.

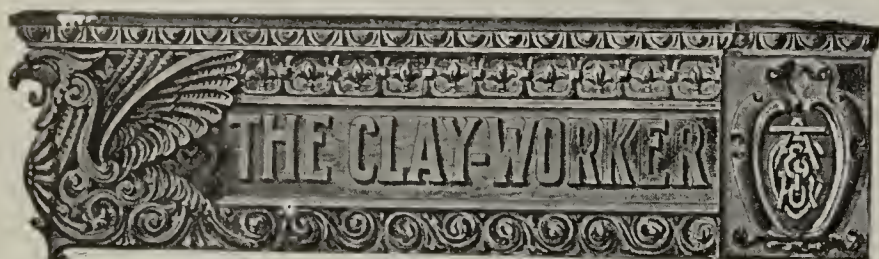
BRICKLAYER SCHOOL WILL BE CONDUCTED AT OAKLAND, CALIFORNIA.

Under direction of the Industrial Relations Committee of the Oakland Chamber of Commerce, a bricklayers' school will be opened, in an attempt to relieve the reported shortage of bricklayers in the Eastbay region. Twelve student bricklayers have been enrolled in the school, each of whom will receive a month of intensive training for which no tuition charges will be made. The school is to be maintained for six months, during which time some 50 men will learn this trade.

Peter Hanson, for 50 years a bricklayer and contractor, will have charge of the school. The brick to be used in the school is furnished free of charge by the McNear Brick Company and the Remillard Brick Company.

The school will be open for boys between 18 and 22 years of age. Application for admittance should be made to the Alameda County Builders' Exchange Employment Bureau at 294 Twelfth Street. Employment is guaranteed to all graduates.

The Industrial Relations Committee announced that a recent survey shows there has been only three bricklayer apprentices in the Eastbay district in the last seven years.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 77. June, 1922. No. 7.

CURRENT COMMENT.

Prosperity is with us—business has come back.

* * *

The brick men who got busy early in the season were wise.

* * *

Speeding up the drying is a popular brick plant sport these days.

* * *

The cement folks seem out to break records this year, too, both in production and sales.

* * *

Radio has demonstrated that when you have awakened a keen interest you can develop a demand.

* * *

One kind of people that we can well do without is the kind who like to stir up strife between capital and labor.

* * *

The best answer to the question of financing more home building is in the organizing of more building and loan associations.

* * *

That Chicago labor leader muddle indicates that workers have been more imposed upon by their own so-called leaders than by their employers.

* * *

The home builder is a big factor in the construction world this year and a cheering feature of the work is that more brick and hollow tile is being included in home building.

* * *

Brick have entered into many new uses but that did not prepare us for the statement coming from Newport, Ky., that whiskey had been removed from a thousand cases in a dis-

tillery and brick substituted for it. Substituting a brick for a ten-dollar bottle of whiskey is going some.

* * *

Texture work and color variety in face brick constitute one of the outstanding features of the season.

* * *

Ten per cent lower freight rates is not enough, but it will help some to reduce cost and to stimulate business activity.

* * *

The aim of every brick manufacturer should be to make good brick at a fair profit and a reasonable price to the customer.

* * *

If the brick division of the clay products industry does not prosper and break some records this year it will miss some good opportunities.

* * *

The high cost of vacation trips may cause a lot of us to take to the woods this year, which, after all, is not a bad place to go for a rest.

* * *

If the coal miners stay out and the railroaders go out the prosperity wagon will be brought to a temporary halt and those who go striking will be worse hurt than anyone.

* * *

With lower freight rates and the coal strike settled we should have cheaper coal before frost, but in the meantime coal costs are a little higher than they were in the spring.

* * *

Not only is the electric motor finally finding its way into clayworking but there is promise that many clayworking plants will in the future buy their power current from outside sources profitably.

* * *

It seems as if we are making better progress with fuel economy in burning brick and tile than in drying it preparatory to burning, and that a little more attention to fuel economy in drying would help some.

* * *

Other countries will suffer more than the United States from the foreign exchange situation and it might be argued that we can stand it longer than the others, but that does not alter the fact that it would be better for us as well as the rest of the world to get these foreign financial tangles straightened out.

THE BUILDING RECORD.

While the returns indicate some slowing down of the building boom in New York City, outside of that building is going on merrily practically all over the country and the year as a whole should beat all records. A promise of lower freight rates in July may cause some slowing down in material demand and shipments until these go into effect, and it may cause building to hesitate a little for the same reason. It should go forward, however, with renewed energy when the lower freight rates do go into effect. So the outlook for the summer and fall is for boom times and probably a scramble for material.

IMPORTING BRICK.

There has come from New York City some talk of importing brick from Europe for building purposes, and there are some cases of actual importing of common building brick in a sort of experimental way. On the whole, however, there is neither call for importing building brick nor is there any economy to be gained from such efforts. There is probably

brick producing capacity in the United States to supply all the needs, and if not it will be easier and more practical to enlarge the brick-making capacity here than to import brick from other countries for building purposes. As a matter of fact our tendency is to gradually develop an enlarged export trade in brick and clay products and in the future we will be an exporting nation and not an importing one.

COMPARATIVE ROAD COSTS.

One of the charts coming our way illustrating the cost of highway construction in different parts of the country with different kinds of material, lists the brick paved roadway at the top with an average cost of \$3.69 per square yard, followed by reinforced concrete with an average of 2.77; plain concrete, 2.62; bituminous concrete, 2.50; bituminous macadam, 2.17; plain macadam, 1.06. Whether these figures are correct as a whole or not they illustrate a well-known fact, which is that in first cost the brick roadway comes higher while the sand and clay and gravel roads come lowest. The final cost of a roadway, however, depends upon the service it brings, the length of time it lasts and what it calls for in the way of upkeep. The contention of the advocates of brick paved roadways is based on the fact that they will last so much longer that they cost less in the final analysis for the service they render.

PROTECTING BRICK.

Some talk about including brick in the tariff bill has led to some acrimonious protests among the opposition papers to the effect that if there is anything American needing less protection than a brick it is a half a brick. In a word, it is contended that our brick industry does not need the protection of the tariff. This is true, too, so far as brick and hollow building tile proper are concerned. Manufacturers in this country on the whole are not only able to produce for home needs and meet outside competition, but our export trade in brick is a much more important item than the import trade. There are some clay lines which deserve protection, the pottery lines in which there is involved considerable hand work, and we must meet the competition of low wages in other countries. These deserve proper consideration, but when it comes to building brick and hollow tile, the industry in the United States will be able to take care of itself without any special tariff protection. The main need is protection from foolish competition at home.

THE COAL PROBLEM.

The real problem in the coal industry is that of how to develop and keep actively going a sufficient number of mines and miners to supply all the needs of the country and not produce a burdensome surplus yet at the same time safeguard the country against shortages.

It is estimated that there is an excess of 150,000 men employed in coal mining. The result of this is that when all the mines are normally operating there is a considerable part of the year in which the miners cannot be employed more than two or three days a week. Now, they have a right to claim a living wage, but to pay a living wage based on less than half time employment while industry as a whole works five or six days a week is manifestly not fair.

We are at this writing passing through a period in which it is said half a million miners are out on strike, yet there has been no real shortage of coal. Those continuing at work

in two states have managed to supply the needs. And though this same minority cannot supply the needs during the winter months it demonstrates clearly enough that there are too many people engaged in the coal mining business for the needs of the country. The real coal problem therefore is one of getting a fair balance up of production with the consumption needs.

A CARPENTER'S HALL OF BRICK.

In an address on the associational idea in business and advertising by S. Wilbur Corman there appears the following:

"It is interesting to note, in passing, that Carpenter's Hall, constructed of small imported bricks, was built in Philadelphia in 1770 as the home of the Honorable Society of Carpenters, which would seem to indicate that the English craft guild idea was firmly established in America at that time.

"The hall is still standing. It was the meeting place of the First Continental Congress of the British Colonies in America in 1774—the real beginning of the associational idea that later developed into the United States of America."

The evident thought in mind in setting this forth was to impress the thought that the guild or the association idea has been with us since the founding of the country. It is an impressive reminder, however, that for ages even carpenters and other workers in wood have appreciated the permanent and other desirable qualities in brick for building purposes.

CHARTING THE BUSINESS CYCLES.

Individual experts have been telling us things about business cycles for some time now and finally we are told that the Department of Commerce is to have a committee which will devote its energies toward charting business cycles and keeping us informed about them.

The idea is based on the fact that we do have cycles in business. That four times in a single generation there have been cycles of depression following booms, and now it is proposed to not only chart those of the past but to study current conditions and keep the public informed of the trend so that we may reduce these wide fluctuations.

If we can get this cycle charting down fine enough and will give due heed to cause and effect the result of the charting should be to eliminate the cycles themselves and keep business on a more stable and permanent basis of prosperity.

STATISTICAL PROPAGANDA.

Statistics have been distorted, warped and expanded to serve selfish purposes in promoting schemes so persistently that recently a speaker at a public gathering said there were three degrees of untruths: first, the plain lie; second, the d—n lie; third, statistics. And the statistical untruth is deplorable because it is insidious and the average man in the street is not prepared to refute it from definite information.

There is a reminder of all this in some discussion of fire-resisting qualities by Wharton Clay, commissioner of the Associated Metal Lath Manufacturers, in which, of course, he is striving to present favorably the case of metal lath. After pointing out that insurance companies give consideration to brick wall buildings by lower insurance premiums on the masonry walls than on frame wall dwellings, even though the interior construction may be identical, he says:

"In fact the latest statistics indicate a greater percentage of fires in masonry walls than in frame wall dwellings of the same interior construction." He admits that the underwriter is justified in his more favorable premium rates on masonry

walls because not so much damage will be done to masonry walls by an incipient fire. But he has struck an insidious attack on brick wall buildings that is an example of warped statistical argument.

We need honesty in propaganda as well as truth in advertising, and not merely a technical adhering to honesty, but honesty of spirit and purpose, and this applies to advertising or brick and other clay products as well as advertising metal lath, lumber and concrete. We know that the making of the home walls of brick while the interior is frame construction does not make a fire-proof home, but it makes a more permanent home and one less likely to be destroyed by fire, for surely brick will not add fuel to fire while the frame walls will. Also there are opportunities to develop the use of metal lath on its merits, and in the course of promoting this or any other materials on its merits all argument advanced should be kept free from back-handed slaps which may prove boomerangs.

CURRENT TRADE LITERATURE.

The American Clay Magazine for June is, as usual, brimful of interesting incidents connected with the clay industry. One item is headed:

A Country of Brick.

Holland is a country where they believe in brick, and Holland, therefore, suffers mighty little from fire loss. Its fire loss per capita is one of the lowest in the world. B. E. Stevenson, writing on Holland, says:

"For brick, brick, brick are everywhere—overhead and underfoot, on edge in the roadway and piled into great walls and massive towers. It would almost seem that the Dutch had dug away most of the ground under their feet in order to convert it into paving and building materials."

The paving brick industry comes in for special mention and a number of interesting illustrations of "brick road that are always good." Something new is shown in a cut of the American "Gas-o-motive" in operation on a brick plant.

The magazine also indulges in poetic flights, as per sample below:

Are You Guilty?

When you hear the fire bell clanging
And the siren's awful screech,
And you know "some" home is burning
With your home beyond your reach,
Do you have a guilty feeling
And do you curse the day
When you built your house of timber
Instead of well burned clay?
There's a heap of satisfaction
In the brick and mortar wall,
And it gives a sense of safety
When you hear the fire bell call.
For you know the loved ones there at home
Are safer, night and day,
Because you've left good brick on guard
To watch while you're way.

A copy of the magazine may be had for the asking. Address the Hadfield-Penfield Steel Company, Bucyrus, Ohio.

JAMES A. RIDGWAY BECOMES A BENEDICT.

We are pleased to chronicle the marriage of James A. Ridgway, of New York City, to Miss Florence Elizabeth Wessel, of that city. A host of personal friends throughout the country will rejoice with "Jim" at his great good fortune, and

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wish him a happy voyage on the sea of matrimony. The event occurred June 14th.

REMOVAL.

The Common Brick Manufacturers' Association has moved its headquarters from the Schofield Building to 2121 Discount Building, Cleveland.

A PRACTICAL TRUTH.

Age is no serious handicap to a man so long as he keeps himself informed and takes up with the worth while new ideas of the day, and youth is not much help to man unless he does these things. In a word, being out of date in a man is not a question of age, but of keeping step.

NEW MISSOURI BRICK COMPANY.

The Missouri Clay Mining Company of Poplar Bluff, Mo., has filed articles of incorporation with Secretary of State Becker, showing a capitalization of \$100,000, the stock having a par value of \$100, all of which has been paid up. The company, which has as its chief intention the mining of clay, also has under consideration prospecting for oil, gas and minerals. It is believed that in time it will become one of the leading industries of southeast Missouri. The stockholders are: John R. Boyden, wealthy lumber man and land owner; Grover Dalton, head of the Dalton Hardware and Furniture Company of Poplar Bluff; and G. Earl Doane, of the Doane Mining and Agricultural Consulting Service of Poplar Bluff. The company has acquired 640 acres of land, northwest of Poplar Bluff, on which has been found large deposits of ceramic clay.



Paved Roads

BY THEIR DEEDS YE SHALL KNOW THEM.

Paving brick—by the superior service they give—justify the extra cost of construction of a brick road.

Likewise, the American No. 290 Auger machine—because of the superior service it gives—justifies the extra quality we put into it.

The American No. 290 is particularly adapted for making superior paving brick, but it is doing record-breaking work on other Clay Products. "Its Deeds Make it Famous," as its users will testify.

WHERE IS IT USED?

Successful plants use it as a pace maker. It speeds production and cheapens cost.

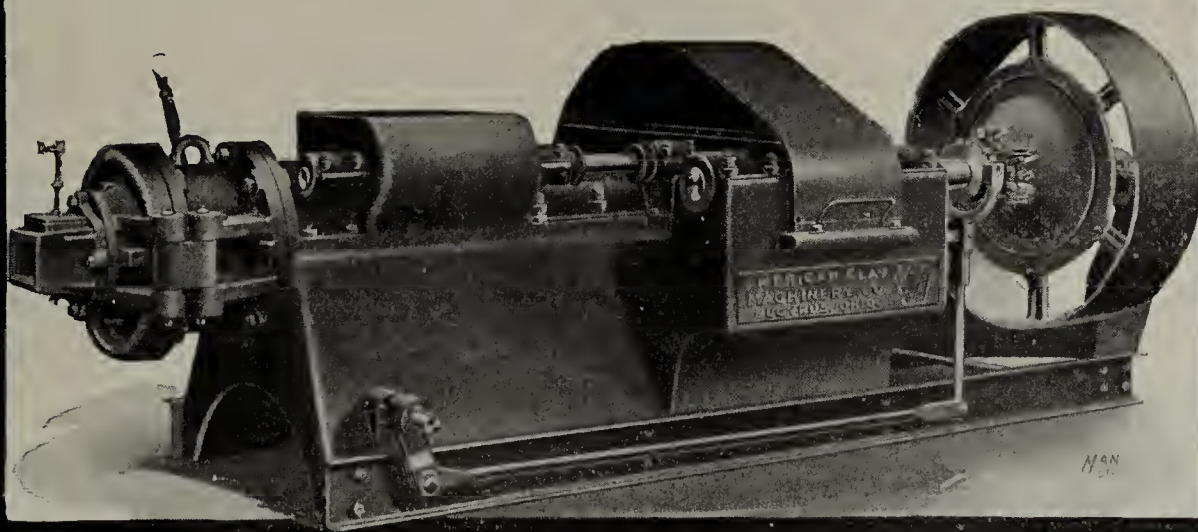
But to be specific, it is used by—

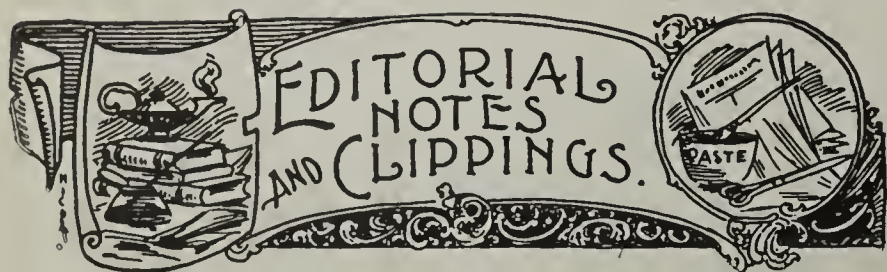
Sheffield Brick & Tile Co.	Mack Mfg. Co.	Dominion Sewer Pipe & Clay Co.
Sheffield, Iowa.	New Cumberland, W. Va.	Swansea, Ontario

And by Many Others whose names you can have on application.

THE HADFIELD-PENFIELD STEEL CO.

Bucyrus, Ohio. Formerly The American Clay Machinery Co.





Thorton Bros. will build a small brickmaking plant at Rudyard, Mich.

W. D. Bellingrath and associates, Mobile, Ala., have incorporated the National Floor Tile Company with a capitalization of \$144,000.

Jack Davey and others are interested in the establishment of a brick plant at Superior, Ariz., where a fine clay deposit has been located.

The Clinchfield Pottery Works of Marion, N. C., will increase the capacity of its plant for the manufacture of flower pots and kindred products.

Theodore A. Young has been appointed superintendent of the State Brick plant at Junction City, Ohio, succeeding William Arehart, who resigned recently.

The plant of Victor Cushwa & Sons, at Williamsport, Md., was damaged to the extent of \$8,000 early this month by fire which was caused by sparks from an over-heated brick kiln. The loss was covered by insurance.

The Rockford (Iowa) Brick & Tile Company, on Monday shipped 13 cars of clay products, which is the largest shipment for one day made in the past two or three years. This would seem to indicate a revival of business.

Houston Clay Products Company, Houston, Texas, with \$10,000 capital stock has been organized. Incorporators: W. M. Merritt, C. L. Hunter and George Kruger. Purpose, manufacture brick, tile and other clay products.

The Peoria Brick and Tile Company, Peoria, Ill., announce the removal of their office from 113 Bridge Street, where they have been for many years, to 129 North Jefferson Street. An attractive show room has been established to show their brick to good advantage.

The American Brick Company, of Berlin, Conn., has been incorporated with \$75,000 capital stock. The following officers have been elected: President and treasurer, George A. Pickett; vice-president, Maude F. Pickett; assistant treasurer and secretary, Edgar M. Pickett.

It is said a merger of fire brick companies headed by the General Refractories Company, Pittsburgh, Pa., in which Governor William C. Sproul is a large stockholder, is about to be concluded and will include the purchase of the Pennsylvania Fire Brick Company of Beech Creek.

A number of people were seriously injured and \$8,500 property damage caused when a gas explosion wrecked a kiln at the McNicol-Corns Pottery, Wellsville, Ohio. A gas pocket formed in the kiln from a leak in one of the mains supplying the fuel, is thought to have ignited when a match was ignited, causing the explosion. The force of the blast was so terrific that all pipes and other equipment in and about the kiln were

torn and twisted and the kiln proper demolished. The detonation could be heard from 10 to 12 blocks from the pottery property.

F. H. Allen, of Donaldson, La., writes he wants to purchase a machine for crushing brickbats, which he desires to use in a concrete filling.

The Potoma Fire Brick Company is installing new machinery at their plant at Piedmont, W. Va., which will greatly increase the capacity.

Jotham Post, Glen Head, Long Island, N. Y., writes he has been busy all spring, and has more orders on his books than he can fill for the next two months.

The Cleveland Refractories Company, Cleveland, Ohio, has been incorporated with \$10,000 capital stock, by S. Q. Keruish, Society for Savings Building, Herbert A. Quayle, and others.

The Old Fort (N. C.) Pottery Works has been incorporated by J. H. Young, J. A. Lowry and H. Jeggein. The company announces that it will manufacture utility ware, flower pots and the like out of pottery clay found here.

The Monumental Clay Products Company has been incorporated at Baltimore, Md., by George H. Haines, Joseph J. Flynn and Edwin W. Herrman, 917 Munsey Building, Baltimore. The company is capitalized at \$50,000.

The Marshall Brick Company is planning to increase its operations at Marshall, Texas, quite a bit and with that in view is installing new machinery that will bring the daily capacity from 70,000 to 90,000 dry pressed bricks.

Business men and financiers of Lexington, Ky., have become interested in the organization of the Bybee Pottery Company, which has been capitalized here for \$15,000. The organizers are Dr. William J. Jillison, Bullitt McCoun and Joseph W. Pirter of Lexington.

The Carrollton (Ohio) plant of the Medal Paving Brick of Cleveland, Ohio, resumed operations the first of June after a shut down of two years. The plant will at first turn out paving brick exclusively. Howard Hawk will have charge of the manufacturing end of the business.

The Clippert & Spalding Brick Company at Lansing, Mich., has recently been reorganized and is running to capacity. G. I. Dietrich, the manager, reports the company has enough orders on its books to keep the plant running for many months to come. The plant has been in operation ever since the Civil War.

Business is very good at the Ashtabula, Ohio, plant of the Burton-Townsend Company, with headquarters at Zanesville, and J. R. Lucktenberg, manager of the plant reports prospects getting better all the time. When running full capacity turns out about a million and a half face brick and equal amount of paving brick. At present the plant is running on paving brick.

The Pittsburgh Brick and Tile Company of Pittsburgh, Pa., will soon establish a plant at Ashland, Ky., for the manufacture of paving brick, tile roofing, hollow tile and other products. The company has leased a tract of land and expects to make an investment of a million dollars. A brick yard will be established. Sam De Bord, of Ashland, is interested in the new enterprise.

TECKTONIUS = VOGT

Up and Down Draft
Round Kiln



The Standard of Excellence in Kiln Construction, Operation and Burning

This kiln insures maximum of kiln stability, economy and production, turns out more and better ware—in less time, with less fuel and labor expense—than any other kiln construction.

WE CAN CONVINCE YOU—ASK US.

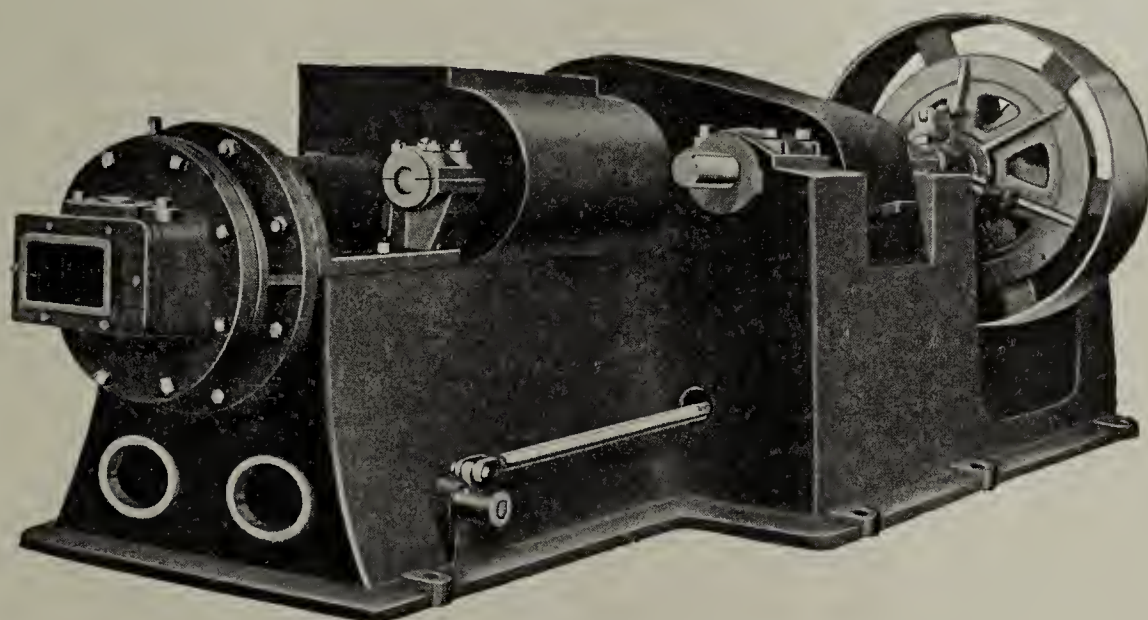
You'll be surprised at our liberal offer on this kiln.

E. C. Tecktonius Mfg. Co. Racine Junction, Wis.

425 - 435 - 445

AUGER MACHINES

PATENTED



**Kushequa (Pa.) Brick Co.
and
Kushequa (Pa.) Ceramic Co.**

have just installed **two** 435 auger machines for Brick and floor tile. Mr. Kane writes,

"The No. 435 machine surely can put the tile across when it has the dust to work with. Our main trouble is to keep anything like enough dust to supply it."

Ask for Bulletin 30.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

DETROIT BRICK AND BUILDING NEWS.



REGULAR ANNUAL MEETING of the executive committee of the Common Brick Manufacturers' Association of America was held in Detroit, May 17. Charles H. Bryan of the Mercier-Bryan-Larkins Brick Co., who is president of the association, presided and acted as host to the visiting brick men. In addition to the regular business, the meeting was called for the purpose of selecting the location for the 1922 convention. Detroit, Cleveland, Los Angeles and Chicago have tendered invitations, but a decision will not probably be made until the meeting of the board of directors at Chicago in August or September.

A fire at the John S. Haggerty company's plant caused about \$25,000 damage and destroyed several brick dryers and part of the engine house at Michigan avenue and the Pere Marquette railroad recently. Several hours of hard work on the part of two engine companies and the fire equipment of the Haggerty company were required to prevent further loss.

The common brick men are enjoying good business and they state that while they are able to keep up with their orders, the demand is increasing rapidly. They admit that there has been a shortage at times.

Face brick dealers have had their troubles. A large amount of work is going ahead which calls for face brick, and the dealers are having a lively time trying to make deliveries.

Handlers of building tile are not without some problems to work out. The demand for tile for large apartments has been heavy, they state, and with the manufacturers going along carefully, the supply is inadequate, they maintain.

J. W. Rollinson of J. W. Rollinson & Co. stated that the future was problematical.

"With the knowledge of the recent slump so fresh in the minds of the dealers and others, they are disposed to look before they leap," he said.

"The manufacturers have advanced the price of tile as the supply grew scarce and the dealer is not sharing in those advanced prices.

"Labor is also getting scarce and that means higher wages and added cost to construction. As soon as a healthy demand shows up, there is a tendency to crowd on a little more profit, but if carried to an extreme it will slow up construction, because the prospective builder will not go ahead when he finds himself staring at increased costs.

"It has been estimated that building prices dropped about 31 2/3 per cent as compared with the high prices of 1920 and work began to move. However, now the prices are moving up rapidly in almost every line, and architects who have taken

figures on the same job at periods during the past year know what that difference is.

It is pointed out in this connection that after hard work by local building associations and others, insurance companies and other financing concerns, including the banks, have begun to loosen up on their purse strings and are more generous with loans.

"We do not want to kill the goose that is laying the golden egg," one large contractor said, "and there is a danger of doing that if we boost prices too high."

Clyde C. Crane Co., Michigan distributors for Consolidated Clay Products Co., Canton, Ohio, stated that business was good, delivery being taken care of, and that the prospects were substantial.

"Dealers in fire clay products are loaded up," he said. "Fire clay tile is bringing in a flock of orders. The smaller concerns have been flooding the market with cheap and shale tile, but the coal strike has forced them to back up, and the larger companies, which are able to buy and store coal, are getting the business at better prices. The smaller fellows had loaded up on orders at low prices.

"There is a dearth of skilled labor in all large building centers and it seems to me there is a tendency on the part of the men to do a little profiteering in consequence of the shortage of workers.

"I am convinced that the manufacturers are not doing that, because they have just gone through the depression and they are not inviting any comeback."

May construction in Detroit established a new high record with \$14,153,100, the estimated cost for 3,042 permits, issued by the department of buildings for the month.

Of this amount 2,242 permits were for new construction to cost \$12,610,162 and 800 for alterations and additions to cost \$1,542,938.

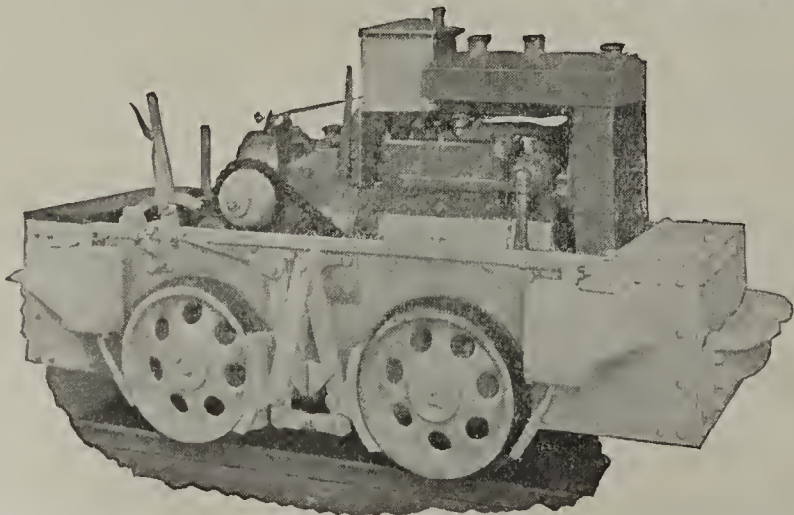
This compares with a total of \$5,203,710 in May, 1921, of which 1,251 permits for new work cost \$5,267,704 and 592 for alterations totalled \$936,006.

In the list for the past month were 780 single residences, cost \$2,773,250; 192 two-flats, \$1,359,550; 37 apartment houses to provide for 1,110 families, \$2,917,500; 50 stores with 103 apartments, \$430,264; 34 stores, \$251,380; two club houses, \$3,350,000; nine major garages, \$648,000; 1,123 auto sheds, barns, etc., \$293,893.

In the classification as to character of construction, 1,807 permits were issued for frame, to cost \$2,657,583; 248 brick veneer, \$1,852,350; 152 brick and tile, \$2,541,579; 28 cement block, \$18,650; seven reinforced concrete, \$5,540,000.

While it was understood that the month was running far ahead of previous months, as indicated by the weekly totals of new construction, the final aggregate was a surprise even to those who were compiling the figures. WOLVERINE.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

CLEVELAND, OHIO

PANS PRESSES CRUSHERS ETC.

SOONER OR LATER YOU WILL
EQUIP WITH
STEVENSON

WHY PROCRASTINATE?

Bulletins on Request

GENERAL OFFICES
AND
WORKS
Wellsville = = Ohio

Western Sales & Engr. Office
802 MONADNOCK
BUILDING
Chicago = = = Illinois

STEVENSON

Mention THE CLAY-WORKER.

NEW ENGLAND SITUATION.



ADVANCES in construction work throughout this section have been very marked and are continuing at the same pace as recorded in the last period. Every city and village of any appreciable size has felt the strong forward surge of the spring demand. The figures compiled of the construction record have shown, and still show, enormous increases in several of the building centers for several months past, and these increases will be even higher in the future months. As a result, the building markets are showing extreme activity. This activity is causing the prices to remain firm, with a possible scarcity of certain lines in sight.

Industrial work in the past two or three weeks has shown a marked increase in many of the important districts. The expansion programs of various industries—particularly the textile mills—have produced a heavy call for brick in quantities and of varying character. With a greater part of the housing program well in hand, the next logical turn would be toward the expansion required by the textile and other industries.

Expansion programs of many of the industrial centers went to the winds when the call for residences went up, but residential work, while still in progress, is not as much in the limelight as it has been. The strong demand which existed at the beginning of the year having been well met, all attention can be placed upon the expansion programs specifically required to help the manufacturer. Some fear that the supply of various materials is problematical, but it is only a matter of a short time when the market will be again on its feet, and ready for the demand. In and around Boston some delay will be felt, due to the bricklayers striking for more money.

The one promising feature is that the whole disturbance is of a localized character, with many of the employing contractors very much against it. The open shop seems to be the basis on which many of the jobs are being operated, which means a greater length of time will be required to get the contractors to accede to their wants. Just what will be done is purely a matter of time for the proper answer.

There is not a great surplus to draw from, but the plants are starting up with the idea of getting all they can ahead to relieve the pressure when the push really gets started.

Prices as a whole show a stiffening, which is noticeable, due to the industrial construction movement coming on a limited supply, as it were. Commons are holding firm at about the former quotations, with now and then a price showing a dollar or two difference, while in the main, the prices seem to stay around the one figure. Face brick is holding well, at a range between \$40 and \$50. The decline in habitation building has had no material effect upon this market, except to give an opportunity to accumulate a reserve. The wanted shades do not vary much, the darks and buffs being the ones most desired, and more particularly the darks. Some very artistic work is done with these brick, as a very striking contrast can be produced. Hollow tile is a desired commodity, with demand more or less depending upon the type of construction most in evidence in the center in which quotations are asked. There is a sufficient stock at present, but should the demand jump with the tide of work, it will not cover the needs. Prices remain around former quotations. A variation does not exceed more than a cent or two one way or the other, and is governed to some extent by the stock on hand.

The Winchester Brick Co. has been formed at Winchester, Mass., to manufacture brick, tile and allied products. This new company has a capital of \$50,000 and is headed by Thomas J. Hymes and E. B. Rowe of Boston, Mass.

The C. P. Merwin Brick Co. and the Richard Murry Brick Co. have resumed operations in their plants at Willingford, Conn. NORTH EAST.

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burning problems from the standpoint of a practical brickmaker of many years' experience.

A. W. Beecher, Indianapolis, Ind.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.



INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

Toronto Foundry & Machine Co.
Toronto, Ohio

Burning Clay Products is the **Most Important Problem** of **all** in the **Industry**. If the **Ware** is not **well burned** it has no **commercial value**. Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

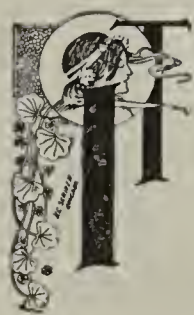
Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

Written for The Clay-Worker.

THE SITUATION IN NEW YORK.



HAS BEEN FELT by many that the haze of perplexity which has hovered over New York has been lifted, because of the recent developments in the building construction business. This uncertainty has hung as a pall over the whole industry ever since the war, but the prospects are very encouraging at this time.

There is a feeling that the remaining hindrances to a very good building boom are but temporary for the most part. The vexing problem at present might be laid to labor supply, but there seems to be an undercurrent that even this will disappear when the proper methods are employed. It appears as though the situation is in much stronger hands than the average layman can see, with the ultimate solution bringing normal business to its feet with a severe jolt.

The residential operations in and around New York have advanced with the spring season and are at a point that almost threatens a shortage of materials. The sister boroughs of Manhattan are recording gains in the lines of apartments and houses with from \$7,000,000 to very close to \$10,000,000 in work in sight. The contract awards in the metropolitan district are running along way over \$15,000,000.

The threatening clouds that have been appearing on the horizon of late are, in a measure, relieved by current year manufacture of brick coming into the market. The acute situation that had developed during the past few weeks, now seems about at an end.

For the most part, building materials have been, and in some parts still are, scarce. This scarcity in a measure can be traced to the time the government withdrew its war-time demands from the markets. Building construction campaigns that were started by artificial stimulation before the building material manufacturers could catch up with current market demands, have had a tendency to project the prices up the scale.

The tax exemption laws as applied to housing operations have had a tendency to keep the market in a very low state in certain commodities required in building. Brick has been no better off than any other commodity, as can be readily seen by the depleted status of other building commodity markets. Mill stocks and yard stocks, which are suitable for speculative housing operations, are low.

At present there seems to be in progress a building construction movement—and it can be rightfully called the first normal movement since pre-war days. There seems to be a feeling that it is more potential than actual, because the high

prices of materials, combined with the high cost of assembly, do not show any material reduction.

There is a movement on foot that leans strongly toward commercial rather than habitation, and with this change in view there will be a different call for material and labor will become more noticeable than at any time in the last year and a half. This demand has come upon the manufacturers with great suddenness and may be an alibi for such a scarcity of material and possibly account for the sudden rises in some of the building materials.

At present there are two very distinct types of demand. One might be termed the speculative building investor, who would rush his building through to completion so as to lease at the earliest moment; the other is the commercial building investor, the one who is willing to speculate upon improving domestic and foreign trade conditions, and the general national prosperity.

These investors succeed in forcing prices down, but appeared in the market so suddenly as to bring about a reaction, and that is really what is taking place at present, and a situation brought about wherein the demand far exceeded the supply, as exists in the brick market today.

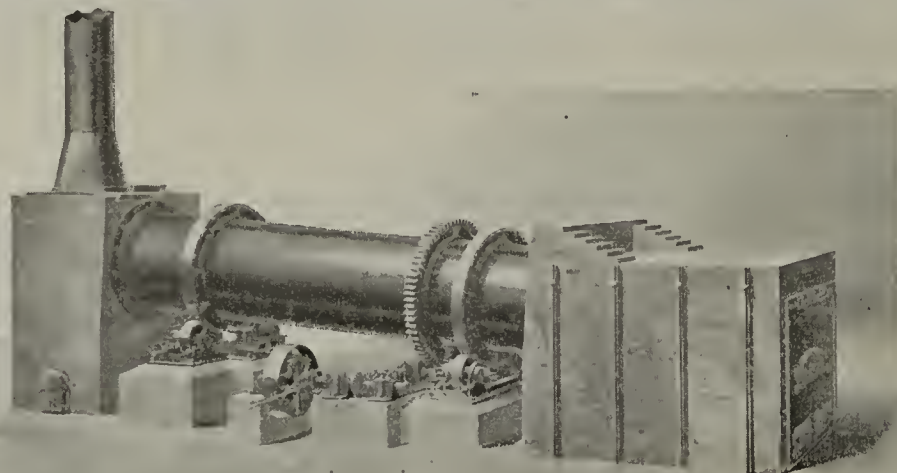
In surveying the price ranges throughout the state there seems to be a wide variation. Along the canal the prices seem to rise evenly, but away from the waterway there is a sharp rise. Beginning at Albany and going westward, we have f o. b. job prices around \$20. Utica comes along with a job price of \$18, while Rochester goes even lower—\$16.50. The greater city itself is asking \$20, which may change any minute, so acute has been the demand, and the supply so limited.

Face brick is holding its own at the former levels, quotations varying from \$35 to \$60, depending on the quantity and quality. Colonials are being slightly favored in the smooth and rough, with the darks preferred as to shade. Hollow tile is around its old figure, with five-inch stock bringing around 12 cents a square foot. The other sizes are somewhat governed by demand; supply has been limited, it is true, but there is an improvement at this date.

Terry Brothers of Kingston, N. Y., are looking to the future, having recently installed two modern brick machines at their yard. Each machine will have a capacity of 100,000 brick per day.

It is reported that "The Mohawk Company" has recently incorporated at Mechanicsville, N. Y. The new company is headed by J. Bet. The capital is \$200,000 and the attorney is F. A. Tate of Mechanicsville, N. Y. A. L. B.

The amount of street improvement being done this year should make for better times in the paving brick division of this industry.



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO



Brick of Clay in Egypt's Sun

Brickmaking was the chief occupation of the Israelites during their bondage in Egypt. The Pharaohs knew the value of such building material and when they had an entire people in bondage, they put them to making brick.

Thus, early in the recorded history of mankind, brick is shown to have been prized highly. As the years have passed, the manufacture of brick has kept pace with improvements and today brick-making is still one of the most important of the world's industries.

But the industry is not as big as it should be. The general public and the architect, the contractor and the builder are not kept sufficiently reminded of the many worth-while qualities of brick. The brickmakers themselves seem to be in the position of accepting business rather than making it come to them.

Brick is bought like any other commodity. The man who buys brick decided that he wanted it rather than any other material. More people can be made to want brick if they are given reasons for wanting it.

It is largely a matter for steady, consistent effort to keep brick foremost in the minds of people who are connected with the building industry and people who may buy buildings.

We should make them recognize that brick has proved itself through centuries of time—and we should

**Make them Think of Brick
First**



"I am in a Bad Hole!"

"See those men going down the track?—they're my bumpers and dumpers. They just quit—and they couldn't have picked a worse time. I'm loaded up with orders and haven't a brick in stock. Of course, their jobs are mighty tough, but some one has to do it.

"Every time bumpers and dumpers quit, it means considerable loss to me. It takes time to train new men to the job, and not only does production suffer, but we don't make as good brick.

"I'm sick and tired of having the entire output of my plant dependent upon bumpers and dumpers. How much does your AutoBrik Machine cost? I had intended to put one in next fall, but I believe I'd be money ahead if I put it in now."

Some weeks ago, just as our Mr. Martin reached this man's brick plant, the proprietor greeted him with the above remarks.

The proprietor was in a hole and knew it and he decided to avoid such holes in future by installing an AutoBrik Machine. He had heard about the economy and efficiency of the AutoBrik Machine; realized that it would increase his production; he could see where it would cut down his costs, and from actual experience in visiting other plants where the AutoBrik Machine was working he knew that the AutoBrik Machine made better brick.

But the point that finally impressed him most and made him ask for an AutoBrik Machine, was the fact that he would be free and independent of bumpers and dumpers who could quit at a moment's notice, just when he needed them most.

And when Mr. Martin showed him that in addition to making him free of labor troubles, the AutoBrik Machine would pay for itself in an attractively short time, the proprietor bought on the spot and urged extra rapid delivery.

The AutoBrik Machine can do for you all that it does for others—all that this man knows it's going to do for him. Act now and steal a march on your troubles.

AutoBrik Machine

If you haven't one, let us send you our illustrated catalog giving full and detailed information.

Lancaster Iron Works, Inc.

Lancaster, Pennsylvania, U. S. A.

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.

Mention THE CLAY-WORKER.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

BRICK GOES ON FREE LIST.

(Continued from Page 649)

freight rate which is conceivable, and neither England nor Scotland can afford to manufacture brick and send them into the territory that Idaho could reach."

Senator Gooding met this statement by saying: "I think the senator is mistaken, because I have letters from those owning brick kilns in Idaho in which they state that at this time brick shipped direct from Scotland is piled up on the wharves of Seattle and Tacoma. Those brick have come around through the Panama Canal, carried in the holds of vessels as ballast. Furthermore, I call the senator's attention to the fact that at Claiborne, in British Columbia, there is a brick kiln that ships its product to Seattle for a freight rate \$3.15 less a thousand than is charged on brick coming from the kilns in Idaho. So the British Columbia plant absorbs the market, for \$3.15 on 1,000 brick, as a freight charge alone, is a good profit for anyone to make. Furthermore, Canada has a tariff of 24½ per cent against Idaho brick, and we can not ship brick into British Columbia and sell our commodity there at all.

"It is true that British Columbia can manufacture brick and can put it into Tacoma and Seattle at a less freight rate than can be done from my state, and that they are monopolizing and taking that market. It is true that they are bringing brick as ballast from Scotland and selling it there and that brick are piled up on the wharves of Seattle at the present time. But it is a question of whether you are going to be as fair to your people as Canada is to her own people, and give them protection.

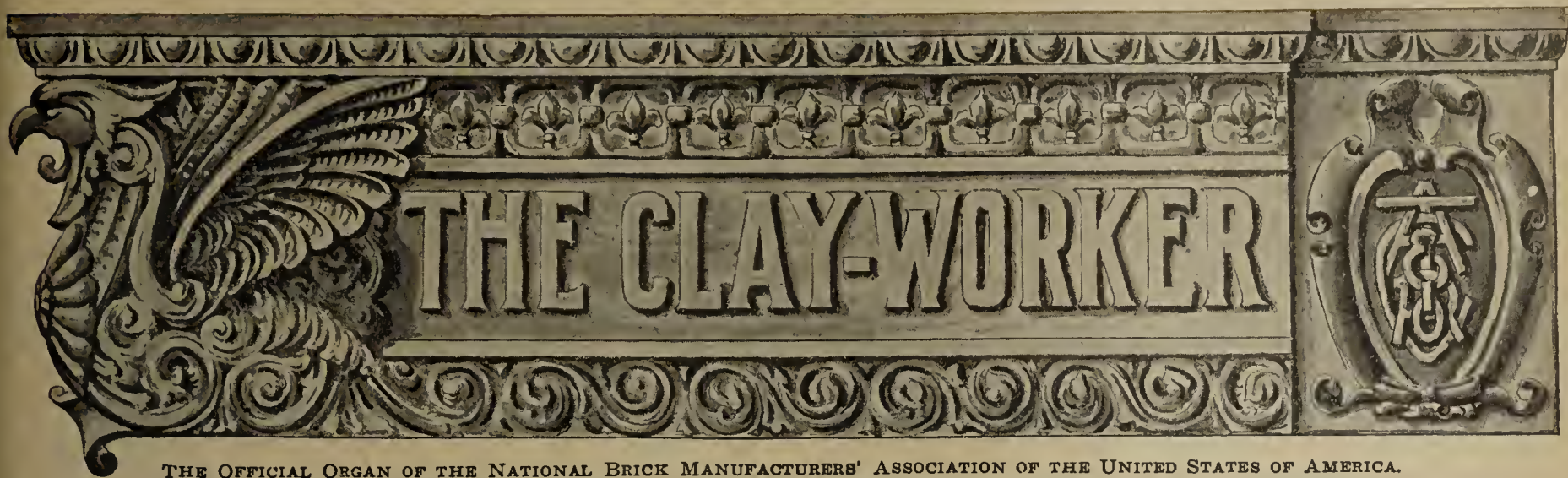
"Of course, everybody knows, so far as a tariff on brick is concerned, or whether it is on the free list, that the price cannot be affected in New York if there is a brick kiln within 100 miles of that city. They can not ship from Canada very far into the United States, nor can we ship into Canada very far. There may be exchanges of brick in different cities along the border, but that is about all there is of it. That is all it amounts to. But in order to destroy a great principle of government, you have fought this little brick protection for two long days with the hope that it will go out to the American people that this is an iniquitous measure, an infamous measure, conceived in corruption and behind closed doors, all of which you know is not true. That is your game. You are fighting your campaign right now, and unless somebody answers in behalf of the great principle of protection on this side, you will do very well when election time comes. There is no question about that. Unless somebody on this side of the aisle tells the truth to the American people and meets the accusations and false statements made on the other side, of course you will be ready to let the bill pass when you have sold it to the American people as a gold brick and a bunch of bunk—there is no question about that—and not until then."

Senator McCumber, chairman of the Senate Finance Committee, spoke strongly in favor of the Smoot retaliatory plan, saying the proviso was designed to protect our brick manufacturers along and near to the Canadian border.

Opposing the retaliatory proviso, Senator Stanley declared that it was an attempt to build up a tariff wall along the Canadian border and was a "slap in the face of Canada" as well as being a small piece of politics.

A motion by Senator Underwood (Democrat, Alabama) to strike out the retaliatory provision was lost, 42-21.

The Senate then, by vote, placed brick on the free list, with the proviso that any country levying a duty on American brick would not have free access to our markets, but that in such cases a like duty would be exacted on the brick products of such countries entering the United States.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 78

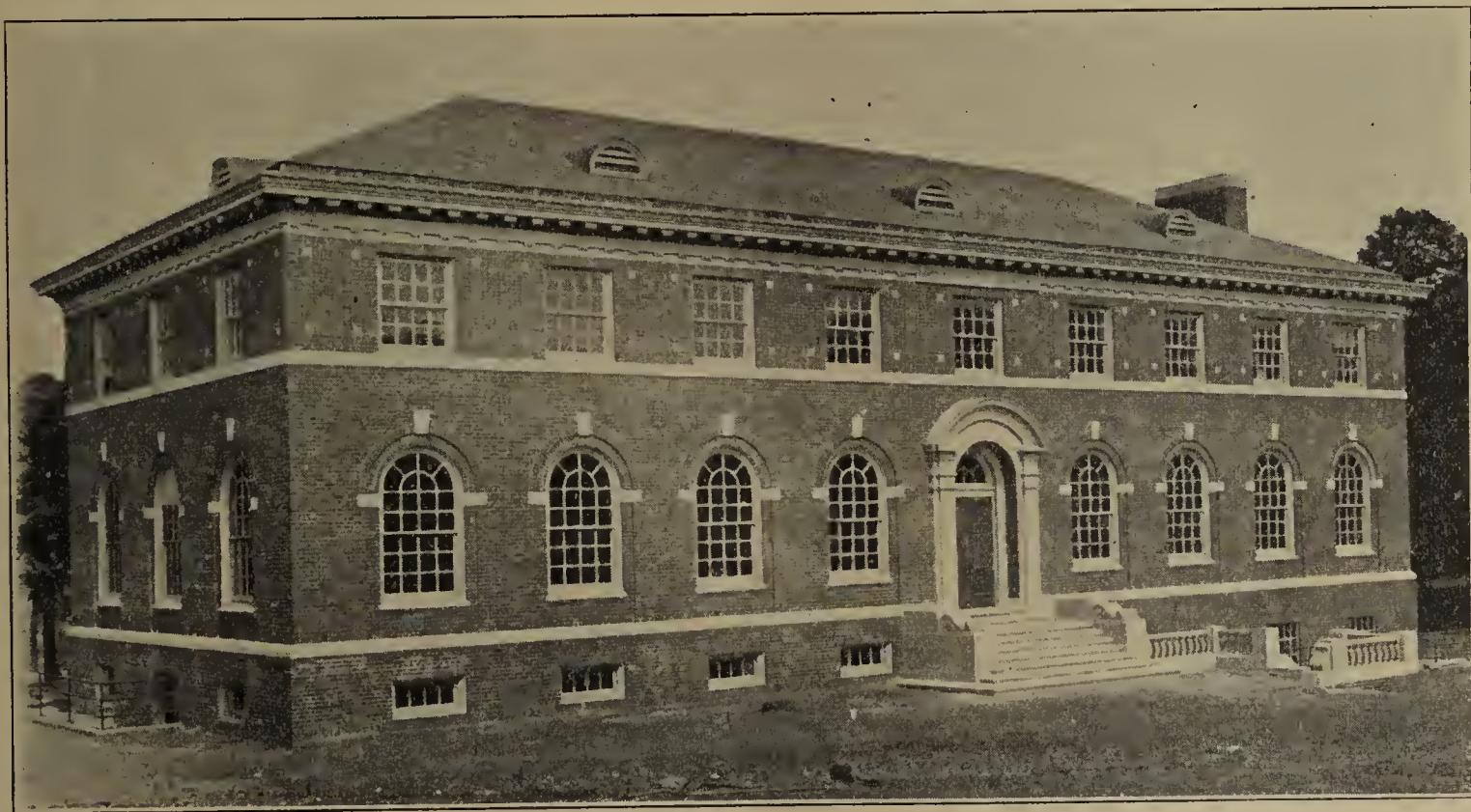
INDIANAPOLIS, JULY, 1922.

No. 1

NEW CERAMICS BUILDING DEDICATED AT RUTGERS: New Jersey Clay Workers Celebrate It's Completion at Well Attended Meeting During Which Col. Edward Orton Jr. is Honored with the Degree of Doctor of Science.

THE COMPLETION of what might be termed a milestone in the history of the ceramic industry in New Jersey took place on June 13-14. These days marked the dedication of the new state ceramics building at Rutgers College, State University of New Jersey, New Brunswick; the conferring of a degree, Doctor of Science, upon Col.

in their natural order—it was well toward noon on the occasion of the one hundred and fifty-sixth commencement year of Rutgers College, that President W. H. S. Demarest of this institution conferred upon Colonel Orton the honorary degree of Doctor of Science before an assemblage of many hundreds of persons. It was accorded, in the words



New Ceramic Building at Rutgers College, New Brunswick, New Jersey.

Edward Orton, Jr., dean of the industry, by this same institution, and the mid-year meeting of the New Jersey Clay Workers' Association and Eastern Section of the American Ceramic Society at Trenton, which brought a fitting conclusion to the events.

To take the proceedings of the notable day of June 13

of Dr. Demarest, "in recognition of his ability and achievements as a scientist, teacher and executive, particularly in the line of research work in the interest of the State of Ohio; as an authority in ceramics, and director of the first college of ceramics in this country."

The honor is made all the more noteworthy in the fact

that Dr. Orton is the first ceramic engineer ever to receive a degree in this country, and the recognition of the entire industry, as encompassed in this honorary degree, becomes all the more memorable when it is considered that it was given by a conservative, "old line" institution, which heretofore has directed the majority of its attention to ministers, lawyers, doctors and other professional men of this status.

When called upon for a few words at the alumni luncheon following, Dr. Orton said that he did not consider this honor as one of individual, personal merit, but rather in the light of an elevated and advanced standing to the ceramic profession. It would furnish inspiration, he stated, to the industry as a whole, in a public acknowledgment of its growing importance and prestige, and would afford a defined goal of attainments for the younger men now advancing in ceramic lines.

Ceramics Building Dedicated.

Promptly at 3 p. m., on this same day, the dedication of the new ceramics building took place before a group of more than 150 persons from all parts of the state.

This new structure has been in course of erection for



Prof. George H. Brown, New Brunswick, N. J.

a year past. It is the finest building devoted to the ceramic art in this country, if not throughout the world, and represents a state appropriation of \$100,000, with an additional fund of more than \$25,000 in money, materials and equipment contributed by leading interests in all branches of the industry, totaling more than seventy-five in all.

The building, reproduced in an accompanying illustration, is constructed almost entirely of burned clay products from New Jersey, and is absolutely fireproof throughout. It is two-story and basement, 45x102 feet, with exterior of selected common red brick, with terra cotta trimming; this latter is of buff, limestone finish, including a base course at the first floor and a stringer course at the second story level. The cornice, also, is of terra cotta.

The interior walls of the structure are of common brick, with floors and ceiling of hollow tile. The partition walls, as well, are of this last mentioned material, dividing the floor space into five large rooms, referred to later on.

The dedication ceremony was conducted by President Demarest of the college, who, in his opening remarks, said

that the building commemorated the twentieth anniversary of the founding of the Department of Ceramics at the institution. He set forth that the structure was the result of the untiring efforts of former State Senator Thomas Brown, who was instrumental in securing the appropriation; Professor George H. Brown, director of the Ceramics Department, and to a number of others closely affiliated with the New Jersey Clay Workers' Association.

Four speakers followed Dr. Demarest, these being former State Senator Brown, LeRoy H. Minton, president of the New Jersey Clay Workers Association; Frank H. Riddle, president of the American Ceramic Society, and Dr. Edward Orton, Jr., in the order noted.

Just a Bit of History.

Ex-Senator Brown gave a brief address on the subject of the value of the new ceramics building to the state and



Edward Orton, Jr., E. M., D. S., Columbus, Ohio.

its important functions in connection with the instruction of future ceramic engineers.

Mr. Minton gave an illuminating and interesting resume of the work that had gone before to bring the expectations and desires for a new ceramic school to a realization of complete fulfillment. He spoke of the pledge made by different prominent members of the State Association to furnish funds and material for the building and how this had been faithfully carried out. He said that this was the first time, certainly in this industry, when the manufacturers and producers in the various branches of a great industry have financially assisted in the construction of a state university, and the equipping of the various departments.

He made special reference to the energetic work of Professor Brown in connection with the new institution; to

Charles A. Bloomfield, Abel Hansen, Andrew Foltz, Charles Howell Cook, C. W. Crane, E. V. Eskesen, Leslie Brown, August Staudt, Frank Valentine, Douglas Fisher and D. P. Forst, all of whom acted as chairmen of different material committees to secure assistance for the building.

Following Mr. Minton, Frank H. Riddle, president of the American Ceramic Society, tendered a brief address, congratulating the men of the ceramic industry of the state on their achievement. He commented on the fine character of the structure, and said that the entire ceramic industry could well take pride in the new state university for ceramic instruction and research in New Jersey.

Dr. Orton, the last speaker on the program, sketched the birth and growth of the industry in this country. He commented upon the establishment of the first technical school for clayworkers in this country in 1894. This school, he



Dr. Albert V. Bleininger, Newell, W. Va.

pointed out, was accepted and supported by some, and ridiculed and sneered at by others.

"A little group of enthusiasts," he said, "consisting of Ernest Mayer and F. W. Walker, Beaver Falls, Pa.; Joseph Goodwin and Homer Laughlin, East Liverpool, Ohio; Stanley G. Burt, Cincinnati, Ohio; H. A. Wheeler, St. Louis, Mo.; W. D. Richardson, then of Cleveland, Ohio; A. O. Jones and R. C. Burton, Zanesville, Ohio; Charles A. Bloomfield, Metuchen, N. J.; W. D. Gates and D. V. Purington, Chicago, Ill.; Theodore A. Randall, editor and publisher THE CLAY-WORKER, Indianapolis, Ind., and a few others, not over two dozen in all, identified themselves whole-heartedly with the plan. They were men whose natures could be kindled by their enthusiasms, whose vision extended beyond their environment, whose generosity was great enough to give of their time and energy even for what looked like a forlorn hope,

whose pertinacity and courage was equal to making a fight for the faith that was in them."

Continuing, Dr. Orton outlined briefly the continual advancement made from year to year in the industry, and branches of learning in the industry, since that time, concluding with an admirable comment on the New Jersey institution, and commending those responsible for its erection upon their courage, energy and foresight.

School Interior.

The interior arrangement of the new ceramics building at Rutgers College carries more than ordinary interest, embodying, as it does, thoroughly modern ideas, and the very best that the industry affords at the present time.

In the basement there is located the kiln room, brick machinery department, two large storage rooms, physical testing room, sagger and plaster shops, locker room, furnace department, and other mechanical operating departments. All heavy clay products laboratory work will be carried out on this floor.

The entire south side of the first floor is given over to the pottery laboratory, with storeroom adjoining for clays



President R. H. Minton, Metuchen, N. J.

and other pottery materials as regularly used in laboratory work. Other rooms on this floor comprise the ceramic materials laboratory, three research laboratories, a class room and office.

Directly over the pottery laboratory on the second, or top floor, is situated a lecture and assembly room, to be used, as well, as a museum for ceramic art pieces. This room is 25x42 feet and is finished throughout in tile. The floor is formed of hand-made, red, fire-flashed tile, with tile paneling and inserts around the ceiling; the fire-place and mantel, also, are of tile. The doorway to this room is an exquisite execution of Italian design, carried out in five-color polychrome and gold leaf, and forms one of the art pieces of the new school. Other rooms on this floor consist of a large chemical laboratory, with small research laboratory adjoining; a library, class room and drafting room, while in the northwest corner, a spacious office is arranged for the director of the department.

Summer Meeting of the Association.

The annual summer meeting of the New Jersey Clay Worker's Association and Eastern Section of the American Ceramic Society was advanced to Wednesday, June 14, to

permit visitors, ceramists and others, to be present at this event. As in former years, the gathering was held at the Trenton Country Club.

The meeting was preceded by an enjoyable luncheon on the veranda of the club, called for 1 o'clock, and a round of good fellowship prevailed throughout the meal. At the conclusion of the luncheon, President LeRoy H. Minton, presiding, called upon Charles Howell Cook for a toast, and the response was in these terms:

"To the new ceramic school and research station—the finest in the United States, if not in the world. Success to the highest degree. A full school of efficient students, and a position offered to each student six months before graduation, at a good salary."

Opening the regular business session, President Minton made a few appropriate remarks, greeting the members and visitors. Following, he presented the only paper on the program, covering a description of the Royal Berlin Porcelain Works, Germany, illustrated with a number of interesting lantern slides. Mr. Minton recently returned from a trip abroad and his paper was based on first-hand observations. The plant was founded in 1763 and is devoted to the manufacture of hard porcelains. The principal clay used, it was pointed out, is the well-known Halle variety, originating from a decomposition of granite rock.

The paper detailed a "flow" of material through the works and explained different features of the equipment employed, including settling tanks, filter presses, kilns, etc., as well as the preparation of the clay for use, drying and firing, glazing, color decorations, and the like.

Past—Present—Future.

Following, President Minton called upon Charles A. Bloomfield, A. V. Bleininger and Frank H. Riddle, in the order noted, to speak individually on the "Past, Present and Future of the Ceramic Industry," and the review and forecast proved highly illuminating.

Mr. Bloomfield related experiences of twenty and more years ago, leading to the establishment of the Department of Ceramics at Rutgers College, in which he was largely instrumental, and later, to the erection of the present building. He spoke of the hardships and labors of the days gone by to bring proper recognition to the clayworking industry.

Mr. Bleininger followed with a pertinent reference of the present day trend. He said that the industry was turning more and more to research work, to a study of the hidden or obscure phenomena, and the benefits thus being brought about. He said that the value of a study of clays and affiliated materials used in the manufacture of pottery and other ceramic wares could not help but result favorably to manufacturers—this has been proved long ago.

Mr. Riddle set forth some bright and interesting possibilities for the future. A leading development, he pointed out, would be along the lines of plant control, bringing about an amalgamation of plant management and the technical end of the industry. Progress was prophesied in the different mechanical branches of operation, including machinery, kilns, magnetic separators and the like. The oil-gas producer, he said, will come into more extensive use in the years to come.

Ceramic Education.

The next speaker on the program was Dr. Edward Orton, Jr., who dwelt at length on the value of ceramic education. He commented upon the new building at Rutgers College and said that it should be the aim of manufacturers in the state to fill this school with young men of the right type. Moreover, it was set forth, students of this character should be given the opportunity to combine work in the plants with

their studies, making for a practical application of their technical knowledge.

Ceramic Research.

Ross C. Purdy, general secretary of the American Ceramic Society, was called upon for a few remarks, and his talk was devoted to the great value of research work in the industry. In this connection, he explained just what was going on in the society he represented, and the different committees that had been formed for the purpose; the resulting advantages, he pointed out, are becoming more and more pronounced every day. He also mentioned the value of co-operation among those in the industry and explained, at length, the aims and objects of the American Ceramic Society.

Concluding Speakers.

The concluding speakers of the day were Charles Howell Cook and August Staudt, heads of the Cook Pottery Company and Perth Amboy Tile Works, respectively, and both past-presidents of the Association. Mr. Cook's remarks were devoted to the new ceramics building, and he urged manufacturers of the state to join together to see that a full quota of students took the course of instruction. In employing men, he said, preference should be given to graduates of the school.

Mr. Staudt directed attention to the value of attending meetings of ceramic organizations and pointed out that it was many, many years since he had missed any such sessions; he commented upon the values and advantages thus gained.

Following a rising vote of thanks to the speakers and out-of-town guests for their attendance, the meeting was adjourned.

Attendance.

Among those in attendance, in the order of registration, were:—George H. Brown, director, Department of Ceramics, Rutgers College, New Brunswick; Dr. Edward Orton, Jr., Columbus, Ohio; D. P. Forst, Robertson Art Tile Company, Trenton; J. S. Hibbs, The Paxson Company, Philadelphia, Pa.; Fred A. Whitaker, General Ceramics Company, Keasbey, N. J.; A. V. Bleininger, Homer-Laughlin China Co., Newell, W. Va.; LeRoy H. Minton, General Ceramics Company, Metuchen, N. J.; Ross C. Purdy, general secretary, American Ceramic Society, Columbus, Ohio; LeRoy W. Allison, Newark, N. J.; John M. Kreger, W. H. Prall and Frank P. Edgar, all of the Woodbridge Ceramic Corporation, Woodbridge, N. J.; Charles Howell Cook, Cook Pottery Company, Trenton; Leslie Brown and J. D. Kuser, Lenox, Inc., Trenton; F. W. Dinsmore, Imperial Porcelain Works, Trenton; J. M. Gillfillan, Trumbull Electric Mfg. Company, Trenton; Richard J. S. Barlow, Roessler & Hasslacher Chemical Co., Trenton; G. A. Williams, Atlantic Terra Cotta Company, Perth Amboy, N. J.; T. A. Kleinfelter, J. L. Mott Iron Works, Trenton; Andrew Foltz, Lambertville Pottery Company, Lambertville, N. J.; R. N. Long, Federal Terra Cotta Company, Woodbridge, N. J.; Charles W. Crane, C. W. Crane & Co., New York; Werner Malsch, Roessler & Hasslacher Chemical Co., New York; S. G. Brinkman, Perth Amboy, N. J.; William Chell, Empire China Works, Brooklyn, N. Y.; H. J. Knollman, The Abrasive Company, Philadelphia, Pa.; Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy, N. J.; C. T. Clarke, Sneyd Enameled Brick Company, Trenton; D. R. Edgar and L. E. Riddle Jr., Edgar Brothers Company, Metuchen, N. J.; S. O. Conkling and E. C. Hill, Conkling-Armstrong Terra Cotta Company, Philadelphia, Pa.; August Staudt and George Simcoe, Perth Amboy Tile Works, Perth Amboy, N. J.; John P. Goheen, Brown Instrument Company, Philadelphia, Pa.; David B. Gibson, Chicago, Ill.; Frederick Stanger, Enter-

prise White Clay Company, Philadelphia, Pa.; L. H. McHose and M. M. McHose, both of L. H. McHose, Inc., Perth Amboy, N. J.; James McCall, Taunton, Mass.; Frank W. Morris, Morris China Company, Trenton; James Prosser, Trenton; A. E. Cameron, North East, Md.; Frank H. Riddle, Jeffrey-DeWitt Company, Detroit, Mich.; Joseph Boughey, Charles Englehard, Inc., Newark, N. J.; James R. Smith, New Jersey Porcelain Company, Trenton; Paul G. Duryea and C. H. Lovett, Cook Pottery Company, Trenton; Kenneth E. Ward, Newark, N. J.; George W. Dilks, Jr., Philadelphia, Pa.; Thomas Layden, Irving Hansen, Henry Hansen and August Zeltman, all of the Fords Porcelain Works, Perth Amboy, N. J.; Richard Loengard, Metal & Thermit Corporation, New

York; Henry F. Kleinfeldt, Abbe Engineering Company, New York; James Hamilton, Trenton; Edward C. Stover, Trenton Potteries Company, Trenton; W. H. Fulper and J. M. Stangl, both of the Fulper Pottery, Flemington, N. J.; William Mueller, Trenton; H. C. Mueller, Trenton; A. Vanderloon, Trenton; B. B. Dinsmore, Imperial Porcelain Works, Trenton; G. N. Valentine, Woodbridge, N. J.; Frank Burroughs, Star Porcelain Company, Trenton; Charles A. Bloomfield, Bloomfield Clay Company, Metuchen, N. J.; Howard Bloomfield, Metuchen, N. J.; M. C. Hendrickson and F. C. Blakesley, United Clay Mines Corporation, Trenton; Charles E. Jacquart, American Enameled Brick & Tile Co., South River, N. J., and M. G. Hartmann, New Brunswick, N. J.

Note—We are indebted to the Journal of the American Ceramic Society for illustrations used.—Ed.

Dedication of the Ceramics Building at Rutgers College

By LeRoy H. Minton

President, New Jersey Clay Workers Association.

RECORDS show that of our men drafted during the recent war, twenty-five per cent were unable to read and write English; out of every one hundred who claimed especial skill, only six were able to demonstrate that they actually possessed it; in every 100,000, only 181 were familiar with even the rudiments of chemistry, the science which underlies the processes of our existence and the industries that make modern civilization. Such statistics would seem to indicate the relative, or partial, failure of our educational system, in that it does not acquaint us with the elementary facts of our existence and environment. Of every \$100 in taxes paid into the Federal treasury, more than \$90 go to meet debts caused by past wars, and to make present preparations for possible future wars. At the same time, only \$1 of each \$100 is spent for public health, education; including research and development, labor, mining, commerce, and agriculture in all its branches. For this reason it is necessary that state and municipal governments make liberal appropriations for educational facilities that make for social advancement and industrial prosperity. It is, therefore, a matter of gratification whenever a public school, or other institutional building, is dedicated to the general welfare of the commonwealth.

American national life is more devoted to industry than to anything else, and to it we are principally indebted for all modern conveniences to which we owe our ease of living. The chief aim of industry should be to increase productivity and eliminate waste, thereby being able to render greater service to our people and to give them more time for leisure and culture.

The foundations of industry, including agriculture, are to be found in the sciences—chemistry and physics. In the ceramic arts, as in most others, perfect reliability can be placed in very little of our knowledge. In truth, aside from certain facts as the multiplication tables, propositions in geometry and possibly some laws of physics, very little knowledge can be said to be true for all time. Most of the assumptions which we ordinarily accept as facts are more nearly hypotheses than certainties, and many of our deductions and conclusions are only rough approximations to the truth. Our so-called knowledge ranges from ideas possessing a high degree of probability to ideas that are merely the result of hope and faith. In every branch of science we are continually making new discoveries that annul the accepted truths of today.

To discover new facts in these sciences and to apply them to industry requires a trained personnel—men who are founded in the fundamental principles and experienced in the art of applying them in practice. Statistics tell us that of every hundred men, only two of them can be classed as leaders. The great need of industry today is for trained men to lead. Men who understand the processes of business—production, distribution, finance and especially the handling of men.

Although one of the oldest of existing industries, the ceramic industry has been one of the last to seek the aid of science in solving its problems. This is largely because the processes involved are not purely chemical or physical. Its processes involve art as well as science. However, today rapid strides are being made in the application of scientific and technical principles to the processes involved in this industry.

The New Jersey Clay Workers' Association, realizing these facts of limited knowledge and need for trained men, and feeling that this great ceramic state should have an adequate department for education and an institute for research, pledged itself to this accomplishment. We stand here today before a fully-equipped building erected to the ceramic industry of the State of New Jersey, and dedicated to the future of the young men who will be the leaders in the years to follow. This is perhaps the first time, certainly in this industry, when the manufacturers and producers in the various branches of a great industry have financially assisted in the erection and equipment of a Department Building at a state university.

The New Jersey Clay Workers' Association embodies in its membership, all branches of the ceramic industry, including heavy clay products, such as brick, building tile, and refractories, white wares, porcelain ware, floor and wall tile, terra cotta, glass, cement, sanitary ware, and all the required raw materials. One great result of the work for this building has been the better understanding and appreciation of our fellow ceramists, and our competitors, through co-operation for a common cause. It has brought to us a realization that we can all find a common ground on which to work for the advancement of our industry and better service to the general public.

When we went before the State Legislature and the Governor to convince them of the value to the state of such an institution, the members of the Association pledged them-

selves to make certain minimum contributions to the building and equipment. It affords me much gratification to state that this pledge has been more than fulfilled.

The industries in the state were roughly divided into nine groups, to each of which were assigned certain obligations. The sanitary ware manufacturers have contributed all of the sanitary fixtures throughout the building, in addition to a considerable sum in cash. This includes all of the porcelain and chemical stoneware sinks for the laboratories and all of the various fixtures for the lavatories.

The electrical porcelain manufacturers have contributed sufficient cash to purchase all of the electrical porcelain fixtures and lighting fixtures required throughout the building. The sand, gravel and clay producers of the state have contributed cash sufficient to purchase all of the large amount of sand and gravel required in the construction of the building.

The terra cotta manufacturers have been exceedingly liberal in contributing to this building. Every manufacturer, with the exception of one, has contributed some distinctive feature of the building. The cornice was made by one manufacturer at cost, in addition to giving the vestibule of the west entrance. The soffit and pilasters of the main west entrance were contributed by another firm. The eastern doorway and the eyebrow window above it were made by two other firms. The consoles to the west entrance were produced by one firm and the balustrades by still another. The doorway to the museum on the second floor is a product of another terra cotta manufacturer.

The brick and fireproofing manufacturers either contributed considerable amounts of material or made concessions in prices of the materials in addition to cash contributions. The general ware manufacturers have contributed cash and some of them will contribute the necessary ware required for the complete equipment of the building.

The fire brick and refractories manufacturers have contributed all flue linings, sewer pipe, fire brick for flues, stacks and kilns, in addition to contributing cash and labor for the erection of the kilns.

The floor and wall tile manufacturers have all contributed liberally, either in direct contribution of materials or by cash to purchase such materials. One of our manufacturers is now working upon a very elaborate tile picture for the large fire place in the museum. One of the equipment manufacturers has contributed a humidity dryer; two of them have contributed recording pyrometers; one of our sanitary manufacturers has contributed a ball mill and other contributions are promised.

In all, more than eighty manufacturers and producers have contributed to this building, and still more are to follow. I wish that time might allow me to name them all, but in the dedication number of our official organ, "The Ceramist," all of these names will be included in the history of the work of this building. It seems appropriate, however, to mention a few of the men who have acted as chairmen of the various committees in procuring appropriations. I should like to mention Mr. Andrew Foltz, the vice-president of the Association, and chairman of the Sanitary Committee; Mr. Chas. Bloomfield, a past president, and chairman of the Fireproofing Committee; Mr. C. W. Crane, chairman of the Sand and Gravel Committee; Mr. E. V. Eskesen, chairman of the Terra Cotta Committee, to whose interest and advice we owe a great deal; Mr. Leslie Brown, chairman of the General Ware Committee; Mr. August Staudt, chairman of the Floor and Wall Tile Committee, and associated with him, Mr. D. P. Frost; Mr. Frank Valentine, chairman of the Fire Brick and Refractories Committee; Mr. Douglas Fisher, chair-

man of the Brick Committee, and Mr. C. H. Cook, chairman of the Electrical Porcelain Committee.

The brunt of the work, of course, fell upon Professor Brown, as is so well known, and this building will always stand as a monument to his work. However, there are two other men whom I particularly desire to mention in connection with this work. I wish especially to express the appreciation of the Association to Senator Thomas Brown. Except for his interest, enthusiasm and determination in carrying through the work necessary to securing the appropriation, this building would not today be in existence. It was really due to Senator Brown's initiative and enthusiasm that those of us who worked with him felt encouraged to carry the task to completion. Another man to whom we owe more than is probably generally understood is Mr. Abel Hansen, our last president of the Association. Mr. Hansen's generosity in liberally contributing to the financial support of the Association during the past two years largely made possible this accomplishment. In addition to this, Mr. Hansen has contributed much of his time and his moral support to Senator Brown and the committee which has had this work in charge. I am glad to make this acknowledgment as a debt of the Association and the state to Senator Brown and to Mr. Hansen. It is a pleasure, also, to express our appreciation of the great interest taken by Mr. Allan B. Mills, director of the State Department of Buildings, and Mr. Geo. W. Ritchie, the architect, and to thank them for their splendid co-operation with us.

The ceramic industry and the state in this undertaking were fortunate in that we have a Governor who fully appreciates the value of industry to the state. Rutgers College is to be congratulated on having as its president Dr. Demarest, a broad-gauged man who appreciates the mutual advantage and necessity of close relations between the technical departments of our colleges and universities and our industries. Having procured this splendid and fully-equipped research building through the generosity of the state and its own assistance, the ceramic industry of New Jersey stands unitedly back of the Ceramic Department to see that the plant is operated to capacity and to the best advantage, through co-operation with the industries of the state.

SOME INTERESTING FIGURES.

THE little house organ "Material Facts" gotten out by the Cleveland Builders' Supply and Brick Co., gives in a recent issue some interesting figures on brick dwellings. These are nothing but figures from the building report of Cleveland, and at first they do not look very striking. They show, for example, that while in an early summer month last year permits were taken out for twelve brick homes, in the same early summer month this year it was twenty-seven. This does not look exciting either when we consider that during the same period there were permits for 258 frame dwellings. When we study the figures, however, they become interesting. They show both progress and possibilities. It shows that more than twice as many homes are being built in Cleveland this year of brick as last year. Also they show that there is a big field for further expansion to ten times this quantity in the course of time and in the progress of evolution toward better building. This is the big feature in the thing, the fact that brick dwellings are gaining ground in new permits. If this same thing is happening in other places as is happening in Cleveland we are building this year twice the number of brick dwellings that we built last year, and we have room to expand in succeeding years until the magnitude of the brick building and brick industry has multiplied several times.

OF INTEREST TO DRAIN TILE MANUFACTURERS



POINTERS WORTH PONDERING OVER.

THE FARMER is a very conservative man, and in the majority of cases is located at quite a distance from the centers of industry and is therefore somewhat slow to react to the present status of affairs. This type of man is generally doubly sure of anything before he goes into it. This may be the reason that some manufacturers of drain and hollow tile are experiencing some little setback in the farmer buying of these products.

The conservative farmer is awake, in many cases, to the ultimate value of these products, both in permanence and utility. He fully realizes that to build of tile means to build for a long period, as does he know that to lay drain tile in certain parts of his farm, he will add just so many more acres of fertile ground and a very good producing ground, to say the least.

These sturdy men of the soil have not fully recovered from some of the stunning blows that were dealt to them a year or two ago, so we can readily see why there is a slow reaction to the immediate industrial situation.

We are all aware that industry has turned a corner in recent months, and has gone a long way toward progress. This can be shown by the amount of increased business in the various lines. These facts are well known in the industrial centers, but the farmer, with his confidence shaken, is somewhat slow to get in line with the ideas that are rife in the more thickly settled localities. With his confidence shaken, he is very reluctant to let his buying power be felt. Despite all this about reluctance and otherwise, the indications are pointing very strongly toward a gradual, but positive, climb to normal on the part of the farmer.

In glancing over the summaries from the manufacturing centers, there are spots in which there is some complaint regarding the number of sales. Some of these might be sifted down to really mean "we have not gone after it as strongly as we should." Others are very proud to state that they are as near as 75 percent to normal. This latter remark is a very bright one, and will be the saying of a great many more before the season is over. One might dare say it will go even over this mark.

The Outlook.

There seems to be a variation of opinion among the tile manufacturers as to just what to expect during the summer,

and even the fall. This can be clarified somewhat when we say that the crop outlook will have a large bearing on what money the farmer will be willing to spend. Should the season on the farm turn out to be a failure, the consensus of opinion among those in a position to know is that the trend of general business will be along these same lines.

Business Boosting Necessary.

From the foregoing, it should be apparent that now is the time to get in some advertising in liberal amounts in order to stimulate a possible fall boom. There are many farmers who, like the fellow from Missouri, "have to be shown." In other words, an educational campaign designed to meet the needs of the average farmer should be inaugurated. There are many farmers who are wide awake to the advantages of both hollow and drainage tile, while, on the other hand, there is quite a large number who do not have a sufficient knowledge of the advantages. These are the ones to be convinced and taught the proper methods of utilizing these burnt clay products. These, in turn, would become staunch boosters, and that in itself would be another convert added to our fold.

Better Salesmanship Needed.

To bring about a general all-around boom, requires real salesmanship, in which the farmer should be urged, and this done in such a way that he will not know he is getting into the fold. By this is not meant "make a sale, and then 'beat it,'" but to return and give advice that will be of advantage. If this can not be done appeal to the Agricultural College in the state in which the farmer lives. These schools are always glad to lend a hand when it pertains to the betterment of the working conditions wherein the agriculturist is given a good round chance to make a good season.

Direct Personal Touch.

Possibly a great deal of the tile business is not obtained simply because the manufacturer or the dealer fails to get into direct touch with the consumer. This is not right unless there is an extensive advertising campaign being operated. Or, rather, one that will give sufficient data in which a direct appeal can be made to the ever conservative man. After all, the direct personal touch is the only real side to work on and is the side on which the biggest returns are to be had.

Where a manufacturer is sitting at his desk and waiting for an order to come in, there is going to be some bitter dis-

appointment, it is feared. A little effort sometimes expended in a certain direction will bring very large returns, due somewhat to a direct touch and a good man-to-man talk.

Time Settlements.

There are a number of ways in which farmers can be made to pay attention to an advertising or canvass campaign. Offers of a legitimate nature can be made. As a rule, a good straightforward offer will appeal to any far-sighted man, but it must be on a fair basis for all. Time settlements can be offered when there is uncertainty regarding crops or other causes over which the buyer has no control. This, appealing to the human side, helps very often to win and in most cases does. Lack of funds very often retards the farmer from making needed additions, and it seems on the face that it might be a good thing to be given a trial. When a man lacks funds and there are needed alterations to be made, he is a hard customer to handle, it will be granted, but it is at least worth an effort.

Other Uses for Drain Tile.

The farmer is not, necessarily, the only one who needs education regarding the uses of drain tile. There is another class—the engineers. The up-to-date engineer is well aware of the usefulness of tile in sub-soil drainage, and does not forget to use it whenever he can, to produce a dry under strata.

There are many places in engineering that drain tile can be used. Under roadbeds, is one, and then a place very often forgotten is at the toe of a retaining wall. Without being in the latter place, the wall is of no avail, should there be a trace of water in evidence. Contractors, too, can use drain tile at the outer edge of foundations. It keeps the sub-soil under the footings dry and gives them a good reputation.

There are many ways and places in which drain tile can be used, and each locality must be studied by itself in order to get a line on a possible outlet. Each will have its drawbacks, but the ultimate is what we are after.

NEW SEWER PIPE PLANT.

A company has just been organized at Frostburg, Md., to manufacture sewer pipe. The enterprise was established through the efforts of the Frostburg Commercial Club, which conducted an exhaustive investigation to determine for what commercial uses the abundant deposit of clay near this city were suited.

The new concern is called the Frostburg Sewer Pipe Company, it is capitalized at \$200,000 and will begin the erection of the plant by July 15th. All stock is subscribed and there is no bonded indebtedness against the concern. A two press plant will be erected with a capacity of about 30,000 tons annually.

Fire brick has been manufactured at Frostburg for many years, and also some hollow tile; last fall Secretary Carrington of the Frostburg Commercial Club secured the aid of the United States Bureau of Mines and the State Department of Geology in making investigations and tests to determine positively what other products could be successfully manufactured from the Frostburg clays. It developed that there are a number of articles in the manufacture of which the clays of that section may be utilized; it was decided, however, to undertake first the organization of a sewer pipe plant and after all the necessary facts were collected and the many advantages of Frostburg for the location of this industry were shown, it was not difficult to float the new company. D. A. Benson, vice-president of the Big Savage Fire Brick Company of Frostburg, will be president of the new company.

BUTTON HOLE TALKS.

W. D. Gates.

"One Touch of Nature Makes the Whole World Kin."



HE WAS SITTING on a park bench and seemed engrossed in what he was doing. I felt curious as to what he was at, so that I worked up near him, but without attracting his attention so as to interfere. Up in the trees over his head the Blue Jays were making an infernal clatter. The Blue Jay has always been interesting to me. He's a sassy bird, a noisy bird, an inquisitive bird, and a bird that is often absolutely profane. Really, I think, it is the only bird that actually swears, doing it, too, fluently and as accustomed to it and without any appreciable effort. I looked more closely at the man on the bench. He had a pocket full of nuts and was doling them out to the squirrels. A squirrel would come galloping up to him and he would have a lot of fun making him hunt for the nut, then away would go the squirrel, hunting craftily for a good place in the turf to hide it; would pick out this place and then that, as being more secure; would dig in a little, then look cunningly around, then trot off and select another place and dig some more, then drop the nut in and wedge it down into its place, firmly with his nose, cover it carefully, look wisely around again, and then come galloping back for another nut. But the man on the bench delayed him, kept fooling him, while at the same time I could see that he kept watching the place where the wise little squirrel had planted the last nut. So I watched, too, my curiosity being fully aroused, and I was rewarded at last and saw the game he was playing. As soon as mister squirrel started off to hide a nut, mister Blue Jay got very quiet and went sneaking along, from limb to limb, with those bright eyes of his doing active duty in keeping every movement of mister squirrel under his active supervision. He was deceived by none of those false digging motions but his keen eyes kept close watch on the nut and never a peep did he let out, for he was now on a still hunt. When there came the final ramming in of the nut and the careful covering of the hole, he gave a wise wink and sat close. As soon as mister squirrel was back, actively engaged in getting another nut, mister Blue Jay lit down, without saying a word in the quietest manner possible, and tore the nut from its hiding place. He bore it up in the tree top, stuck it into a crevice in the bark of the tree and then yelled and laughed till the woods rang with his merriment. Then he would flit back near the man and yell at him and call him names so as to distract attention but ready all the time and alert to mark down the next nut planted. The man on the bench was taking it all in, was thoroughly enjoying it all, laughing and chuckling as he doled out nut after nut.

The Blue Jay was surely enjoying himself to the limit. Suddenly his attention was distracted elsewhere and he lit out for the point at which he had stored his accumulation and let out a yell of fury. Another squirrel had there been busy and carried every nut safe into a hole in the tree and hastily fled in there with them. Hovering at the entrance to the hole, but helpless to do anything more, the Jay ramped and swore, was utterly and absolutely profane, as he expressed his feelings.

Just then the man on the bench looked up and caught my eye and remarked:

"Some use strength and some scheming to get what they want but they go after it and they get it. That Jay dare not come close and get the nuts. The squirrel has the courage, or assurance, to come get them. Then the Jay uses strategy, gets them and euchres the squirrel. Then the retiring, quiet squirrel over there does the Jay up. How intensely human they all are, after all. Doing just what we mortals are doing all the time, taking it away from each other."—Common Clay.

USE FOR GROUND CULLS.

DID YOU ever visit a clay product plant without seeing piles of broken and crushed overburned or underburned ware scattered around in hollow places or even marking the way from some distance before you get in view of the factory?

In this day and age we may well call this extravagant waste, for quite a few manufacturers are turning their culls and seconds into money, and it isn't such a difficult job, either.

Out in California there is quite a fad now in roofing that requires a great amount of crushed burned clay. Small pieces of burned clay are used for the surfacing material, cement or asphalt is used for the binder and this covers the roofs. Some say that perhaps this is applicable only in warm climates but there is some of this being used in Indiana with much success.

It certainly makes an attractive roofing material and architects are becoming quite interested in it, so that there should be quite a field here in which the clay products manufacturer can dispose at a neat profit of a considerable part, if not all, of his spoiled ware.

Ground up bats and broken tile are used to some extent in



Paving Brick Culls Being Ground for Road Material.

road work. The illustration shows the crusher and conveyor on an Indiana plant. The latter elevates and drops the prepared material into a storage bin seen on the left. The ground material finds a ready sale in county road improvement.

A little educational campaign will focus the attention of the proper parties onto the adaptability of crushed clay and it is possible that a great amount of this waste will be sold and not only add to the profits of the concern but give an additional beauty to the future homes and highways to be constructed.

PRODUCTION OF CLAY IN 1921.

THE OUTPUT of clay mined and sold as clay in the United States, in 1921 was 1,716,746 tons, valued at \$6,025,300, or \$3.51 per ton, according to the United States Geological Survey, Department of the Interior. This was a decrease of 45 per cent in quantity and 48 per cent in value as compared with 1920. These figures represent only clay sold as clay by the original producers; they do not include the much greater quantities of clay burned into clay products by the producers themselves.

The production of kaolin, the clay that is used in making

high-grade pottery and porcelain as well as paper and other products, was 162,726 tons, valued at \$1,579,163, a decrease of 39 per cent and 45 per cent, respectively, as compared with 1920. The clay of largest production and value is fire clay. The sales of fire clay in 1921 amounted to 1,195,861 tons, valued at \$3,560,373, a decrease of 49 and 52 per cent, respectively, as compared with 1920. The output of every kind of clay as classified by the Geological Survey in its statistical report decreased in quantity and value in 1921 as compared with 1920.

The imports and exports of clay also decreased in 1921 as compared with 1920, and the decrease was proportionately greater than the decrease in the domestic production. The total imports of clay were 208,915 tons, valued at \$1,974,685, a decrease of 48 per cent and 51 per cent, respectively. The imports of kaolin, the chief clay imported, were 162,906 tons, a decrease of 55 per cent as compared with 1920.

AN IMMENSE DEPOSIT OF MAGNESITE IN SOUTHERN NEVADA.

A MASSIVE DEPOSIT of magnesite of unusual character that has recently been brought to the attention of the United States Geological Survey promises to yield a large and readily available supply of this material. The deposit lies in Clark County, Nev., in the valley of Muddy River, one of the tributaries of Virgin River, a few miles above the town of St. Thomas. The material has been known for some time as kaolin, and successful experiments for utilizing it as a porcelain clay are reported to have been made, though they have not yet resulted in the exploitation of the deposit. The recognized outcrops have been located as mining claims, and some preliminary exploration and development work has been done. A side track on the St. Thomas branch of the Los Angeles & Salt Lake Railroad, about 3 miles northeast of the northernmost group of claims, offers a readily available railroad connection, and the station has been named Kaolin from this deposit.

The so-called kaolin is stated by the Geological Survey to be in fact a magnesite and was deposited in a highly magnesian sedimentary bed, a part of a regularly stratified series of sedimentary beds exposed by stream channels that cut across a low ridge at the upper edge of Muddy Valley. The deposit forms a chalky-looking bluff, dazzlingly white in the bright sunlight. The material is porcelain-white, fine grained, and massive, is remarkably free from foreign material, and has the structureless appearance and conchoidal fracture that are generally characteristic of magnesite. It is not so hard as the more typical magnesite, and it crumbles more rapidly on exposure to the weather.

The deposit is included between tilted beds of conglomerate and sandstone below and shale above. The lower contact is sharply defined, but the magnesite grades up into the overlying beds. The purer part of the deposit consists of beds aggregating at least 200 feet in thickness. Within the section of purer material there are a few bands of sandy matter, but these are minor in amount and apparently almost negligible, as they could undoubtedly be avoided in mining.

GEORGIA CLAYS AND BAUXITES.

In the course of the investigation of Georgia clays and bauxites, being conducted by the Bureau of Mines at the ceramic experiment station, Columbus, Ohio, bricks were recently made from twelve of these clays, previously calcined at 1,450° C. Porosities, load tests under heat, spalling tests and slag penetration tests were run on the burned bricks, some of them proving to be of excellent quality. The more bauxite clays did not make sufficiently dense bricks to withstand the load and spalling tests.

THE NEW YORK SITUATION.

By Allen E. Beals.

COMMON BRICK holds the center of summer interest in the eastern building construction industry.

The long season of wet weather in June and the heavy downpours in the Hudson river, New Jersey and Connecticut brick manufacturing districts hampered production up to July 4th, whereupon clearing skies lured open yard workers in many manufacturing sections to prolong their holiday. In consequence brick shipments into this market were light last week and many dealers were without any supply of this building commodity whatever as the week closed.

The direct result of this turn of events was to place an unusual value upon second-hand brick, which touched the top

Under such circumstances it is to be expected that prices would have a tendency to advance, but so far, at least, there seems to have been a tendency to sense the waiting tendency on further housing enterprises for the present brick pressure to subside sufficiently to bring about a market of less pressure and hence, lower prices. More than \$7,000,000 in building projects are definitely being postponed awaiting a more settled situation between supply and demand for basic building materials like brick. This attitude is being supported openly by building loan interests.

A queer twist has been given to the brick situation in consequence. So-called higher grades of brick are bringing \$20 a thousand and the brick rated by the trade as of lesser quality are being held at \$21, upon instructions to agents by manufacturers to sell them only at that price. Dealers, many of whom are making deliveries of brick to builders under contracts signed months ago at \$17 have refused to pay more than \$20. Producers of higher rated brick have met this



An Improved Clay Gatherer; Caterpillar Tractor Harrowing Clay in the Clay Field of the Progress Press Brick Co., St. Louis, Mo.

as far as available records show, at the price \$50 a load of 3,000 delivered to job-site above 110th Street or to near-by points in Long Island. This kind of building material is being sold at points below 110th Street in Manhattan at \$48 a load.

New common brick at wholesale is quoted at the week-end at \$20 to \$21 a thousand, wholesale (add cost of handling, haulage and 10 percent for delivered prices). It is being taken as fast as it can be obtained from arriving barges and is being ridden direct to jobs, no dealer carrying any in stock excepting dock-loads, which may be piled in order to promptly release barges for the return trip. Some dealers are receiving brick from distant points by rail every day and a small quantity is coming in from Connecticut. In both New Jersey and Connecticut local demands are quite sufficient to take care of practically all the plants can produce, so that the Hudson river district is practically the only important source of supply for this market.

level, while producers of brick graded lower still rigidly hold at \$21 and are selling all they can ship, according to their agents.

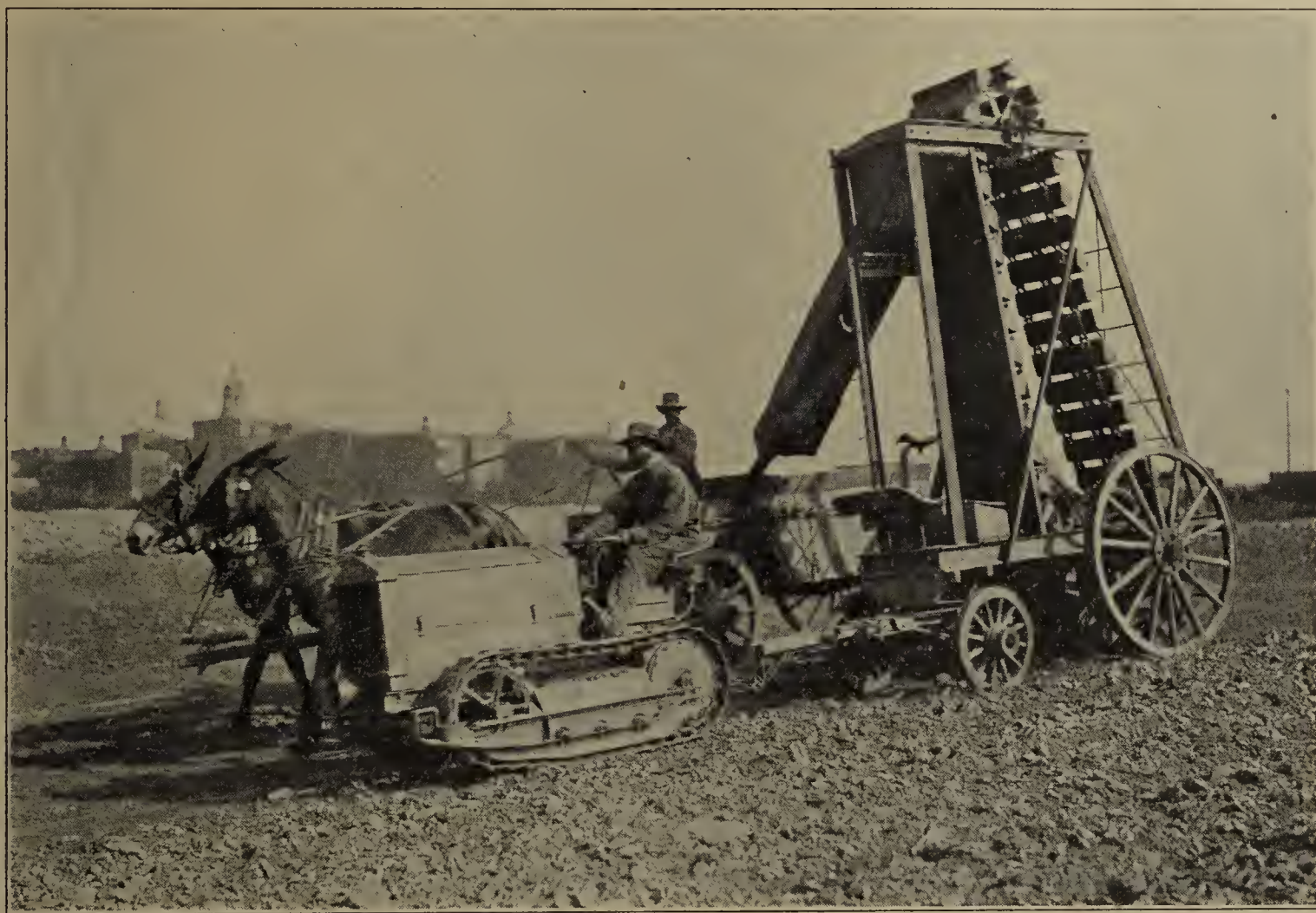
Commercial construction does not call for as much brick as the type of housing construction that has been largely responsible for the excessive brick demand this year so far. A fairly representative Bronx tenement will require 500,000 lower graded brick which will be set up quickly, whereas a high-class commercial structure will use more decorative materials except for interior work, hence the brick quantity will be lower. Just at present the big rush is for brick to finish partly completed tenements in anticipation of October renting, but new work of this character requiring this type of brick is being held in abeyance for lower prices.

Meantime there is a strong commercial building construction movement requiring less common brick, but calling for

higher grades of what brick they do use. The question confronting brick manufacturers, there, is: "Who is best able to wait?" The answer, under present circumstances and tendencies of the money market, is generally given as being more favorable to the financier, who is once more beginning to feel himself in the driver's seat when negotiating for building materials and labor and by autumn he apparently is going to be able to snap the whip loud enough to be heard throughout the building material manufacturing industry.

AN IMPROVED CLAY GATHERER.

THE ACCOMPANYING illustrations give a very clear idea of an improved clay gatherer recently introduced on the plant of the Progress Press Brick Company, St. Louis, Mo. A gasoline caterpillar tractor is used for motor power. The clay is first harrowed with a drag as shown in the first view,



New Clay Gatherer in Operation; Jake Stocke Says It Speeds Up the Work and Is a Decided Improvement Over Old Methods.

then a clay scraper and elevator is attached and the clay is gathered up automatically and dropped into a wagon or dump cart in which it is conveyed to the clay bin. The whole process is simple, economical and effective. The work is done speedily and with a minimum of labor and cost. It is of particular interest to dry press brick manufacturers any of whom desiring further information can obtain same by addressing J. Stocke, Jr., 3205 S. Kingshighway, St. Louis, Mo., who writes that they have been using the device for some time, plowing and loading clay for 150,000 brick per day, 50 percent of which is being used for making rough texture brick and the balance for square edge smooth press brick.

Every once in a while we get a feeling that the coal men themselves are partly to blame for that hard name they've got hung onto them.

INSURANCE COST.

THE OFFICIAL PUBLICATION of the National Board of Fire Underwriters makes a graphic pictorial chart of the insurance dollar, to show where it goes and what it is used for. The figures with this picture which are made to cover only members of the National Board of Fire Underwriters, show a premium income for 1921 of \$489,700,366. Out of this, loss was paid aggregating \$281,331,464, and expenses for the year, including taxes, amounted to \$214,412,256, leaving a deficit of \$6,043,384. These are the figures for the board members. The estimate is that the total 1921 fire losses approximated \$485,000,000. There are several interesting things about these figures as they are charted. One of them is that the expense of carrying on our insurance business amounts to about three-fourths the total paid in fire losses. It gives one a feeling that our insurance is rather

burdensome with overhead expenses. The most impressive thing about it all, however, is in that we are evidently paying in this country about three-fourths of a billion dollars a year for insurance to cover fire losses and the expense of operating our insurance companies. Now, plainly, the way to reduce insurance cost all around is to reduce the fire hazard, and the way to reduce the fire hazard in general is plain on its face—it is to build with material that is non-combustible. Do we need any better argument in favor of the use of more clay products in building operations?

Figures in hand indicate that our total export trade for the fiscal year ending with June will amount to four billion dollars and our imports to about three billion, which is not a bad showing under the circumstances and incidentally it leaves us with another billion balance in our favor.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

Relative to Burning Tile.

QUESTION: We are beginners in the manufacture of drain tile and would appreciate good information. One of our draw-backs is the two or three first tiers on the bottom of the kiln are a little pale when the top tiers are nice and red. If this can be remedied in our kiln, please let us know. We also have trouble in having rough ends after the tiles are cut off.

Answer: In any down-draft kiln we get lighter tile in the bottom than on top. It may be that in the present instance the kiln bottom is not the best type and your correspondent is getting a wider difference in top and bottom than would be the case with a better type of bottom. We do not know what type of kiln he has and it may be all right. If so, then the question is whether in his burning he is getting the best possible results. After the heat is up to the finishing point on top, it should be held there until a satisfactory temperature is attained in the bottom. Clayworkers call this stage of the burning "working (or driving) the heat to the bottom." It is possible to get practically the same temperature in the bottom of the kiln as that on top but at a fuel expense not justified. We do not need fully the same temperature, because the weight on the bottom tile increases their density. As a rule, however, tile makers do not go to the limit, for the sake of economy, and get some light tiles in the bottom. Many clays having a short burning range will not permit holding the heat on top, and with such clays it is necessary to sacrifice some bottom tiles, but if the clay in question is satisfactory in its burning range there should be no difficulty in getting hard tiles on the kiln floor. C. P. E.

Relative to Burning an Up-draft Kiln.

QUESTION: I would like to ask a few questions in regard to my kiln arches. I have quite a little trouble with them. They won't stand up at the last firing. They do not melt down but the hangers seem to tip right in and that leaves a hole so the fire goes up in one place and it makes a hot spot and clinkers. How long should we fire after the fire is on the top of the kiln? I do not get my kiln settled even. Some places it settles four or five inches, and others it settles a foot. I do not get the fire to burn the brick in the top of the kiln and get too many soft brick. I have a solid wall around the kiln, 16 inches thick half way and the rest of the way 12 inches thick.

Answer: One would conclude that the clay is such as softens under the heat in the arches and the superimposed weight and these cause the ends to sag down, or it may be that the burning shrinkage is excessive and the arch bricks

shrink more on the exposed ends which would cause downward tipping mentioned by your correspondent. He can accomplish a good deal in the setting, but a discussion of the different settings would make this letter too long. It is my recollection that Lovejoy shows methods of setting in his "Burning Clay Wares." It seems to me that the setting on top of the arches should be tight and between the arches open—the first to spread the heat and drive it out through the sides of the arches instead of allowing it to pass up through the top, and the open setting between the arches will take the heat up into the kiln masses above.

I do not know how long a kiln should be fired after the heat is through to the top. My rule was to fire until I got good brick nearly up to the platting. The amount of the settle aided us in determining the finish of the burn but we did not rely upon this alone. Tight platting helps in getting the heat to the top courses. In some yards they cover the top with dirt or ashes, which brings the heat close to the top, but no one likes to use the dirt covering and will not if he can get by with his product without using the dirt. It is troublesome to put on the kiln and to take off, and besides, the men drawing the kiln object to it because it is always sifting down as the bricks are being removed.

Many yards, however, use dirt or ashes to cover a hot spot as indicated by excessive settling and such covering will drive the heat to the colder parts of the kiln. To be effective, however, one must cover the hot spot before it has gone too far and in this way a very even settle can be had all over the kiln.

It requires more skill and experience to burn an up-draft kiln, and if one gets satisfactory results he should be eternally vigilant. C. P. E.

CO-OPERATION AMONG CONSTRUCTION INDUSTRIES.

THE RECENT organization of the American Construction Council is a reminder of several things, one of which is that there are already many organizations among the different divisions of the construction industries, and that there is need for some co-ordinating machinery that will function simply and clearly and will be helpful instead of confusing.

The construction industry is perhaps the most important of the country in point of number of people engaged directly and indirectly and the amount of the investment and the value of the work involved. Incidentally it is said there are already about 250 associations in the various divisions of the industry and the desire is to develop a sort of clearing house organization which will help keep alive the right spirit of co-operation.

The purpose is commendable, but the job is not an easy one. There is confusion in the numbers and the widely divergent interests concerned. And it is quite a problem to develop a form of organization which will be efficient and useful instead of confusing and wasteful of time and energy.

Mass meeting conferences and gatherings are interesting and inspiring, but they are not productive of the positive results which may be obtained through committee work and special delegate conferences. After reviewing the latest effort and considering the outlook in the light of past experiences, one feels like saying that a central council of this kind should be a delegate council to get our results in an efficient manner.

The first convention was held at Washington, June 20th, and was called to order by Secretary Hoover, who made a brief but appropriate address. There was a good attendance, some 300 representatives of the construction industries being present. Franklin D. Roosevelt was elected president and promises to use his utmost endeavors to make the organization effective and of real benefit to the construction industries of the nation. Those present representing the brick and tile industries were: Wright D. Goss of New York, Warren Griffiss of Baltimore, Md., Knickerbacker Boyd of Philadelphia, Pa., H. M. Keasbey of Pittsburgh, Pa., F. M. Walker of Beaver Falls, Pa., and Theodore A. Randall of Indianapolis, Ind. Mr. Walker was made chairman of the manufacturers' committee and Mr. Randall served as secretary.

THE FREIGHT RATE PROBLEM.

THE ABOVE TOPIC is one which is troubling many of the clayworkers of the land. Very few people understand that at the present time the railroads have no logical basis for freight rates. C. B. Stowe of the Stowe-Fuller Company, Cleveland, Ohio, one of the leading fire brick manufacturing concerns of the country, has been making a fight to get some basis for freight rates from a transportation standpoint. His viewpoint is given in point in the accompanying reprint from a recent article in the "Iron Age."

WHAT IS THE MATTER WITH FREIGHT RATES?

To the Editor:

Everything else has been reduced, but the Interstate Commerce Commission and the railroads are at loggerheads in regard to what is a fair measure of rates, and the manufacturers and the people at large are still paying wartime freight rates. Increases of from 100 per cent to 2100 per cent over prewar rates are still in existence. Railroad wages, fuel and all railroad materials have been reduced, but not freight rates.

The present administration has celebrated its first year of reform and retrenchment, and the railroads have had one year of overlap on wartime rates and have recovered to the extent that manufacturers and the community should now be given some consideration, but it is the old story—"the public can pay." They have paid for the last five years and they must pay to the end of the chapter, or until some one calls a halt, and then the railroads will complain that they have not been fairly treated and that new regulations which the Government makes are confiscatory. Let the railroads get busy and start out with some new measure of freight rates than can be understood, and one that is fair to the railroads as well as to shippers. Their old classifications of thirty years ago are obsolete, and their old principle of "might is right" must be forgotten in the new order of affairs.

What is the Basis of Rates?

At the hearings before the Interstate Commerce Commission in 1907, the general freight agent of one great system was put on the stand as a witness in Case No. 896 and asked how freight rates were made. His reply was, "Conditions make rates," and when asked, "What conditions?" he said, "Conditions of business; conditions of haul," and the commission got no further than that conditions were the basis of the rate structure. Then the general freight agent of the largest railroad system in the country was called to the witness stand, and in reply to the question of what basis was used to make freight rates, he came out flat-footed and said that freight rates were made on the amount the traffic would bear. He was correct in his statement, and it is probably a fact that most private business is based on these lines; however, the railroads are not private institutions, but semi-public institutions, and demand the right of eminent domain and other public benefits. They must be under control of some department of the Government, and the public should have some say in the operations; to this end the Interstate Commerce Commission was formed, and this commission is doing a great work for the railroads, the shippers and the public. It is doubtful where this country would be today without the great Federal Bank System and the Interstate Commerce Commission, providing some regulation in both the banking and railroad interests of this country.

Many hearings have been held before the Interstate Commerce Commission for adjustments and lowering of freight rates on all material for the past eighteen months, but noth-

ing definite has been done. The railroads have been promising reductions, but their promises are yet unfulfilled. Petition after petition and intervening petitions have been filed on brick and other building materials, but as yet nothing has been done in regard to rates on building materials. All commodity rates can not be straightened out until the fundamental principle in regard to a measure of rates is determined by the Interstate Commerce Commission, which must arrange for a new classification and decide on some basic measure of rates.

New Classification Badly Needed.

I also find that this is now being asked for by the railroad executives themselves, as the old basis of rates made by them and admitted by testimony before the Interstate Commerce Commission, was based entirely on the amount the traffic would bear regardless of cost of haul, and in one of their basic decisions, June 24, 1907, in case No. 896, they decided that "Classification must be based upon a real distinction from a transportation standpoint. Aside from the difficulty in learning what use the brick were to be put to upon reaching their destination, the commission can not regard a classification as scientific or a difference in rates as well based, which is altogether founded upon a distinction that has no transportation significance. Such a differentiation, if permitted and extended throughout the various classes of freight, would lead to almost an endless multiplication of rates, which could find no excuse save the use which might be made from the article transported."

The basis of rates made on the amount the traffic will bear, I believe, is a thing of the past, and under Government supervision railroads must treat all commodities and shippers alike as to the services rendered them. I find that the railroads themselves have found that their basis for rates is not logical or in tune with the present trend of affairs, and they must abandon their old classifications and principles in rate-making, which are now obsolete, and furnish service based on some cost of haul or other fair measure of rates. I find that the railroads themselves acknowledge this, and have asked the Interstate Commerce Commission—Clause 2 in their requests—"To adopt a fixed policy of rate-making." They have a fixed policy on passenger rates and can figure their income accordingly, but with the present policy of freight rates based on the amount the traffic will bear in the minds of the various railroads themselves without regard to the shipping interests, they are entirely at sea in regard to revenue, for the shippers in different sections do not agree with the railroads as to their decision concerning what in their opinion the traffic will bear, which is a changeable proposition.

There must be some measure of rates that can be applied to the hauling of all materials and a new classification made up that would be fair to all interests from a transportation standpoint. I can understand this is a hard proposition for the Interstate Commerce Commission to decide. They have now had over one year, and some decision should be given that would straighten out this whole matter. If such a decision could be brought out soon, it would be a simple matter to adjust all rates to all sections, putting them all on the same basis for like service to different markets and simplify this whole matter. This would make a great saving for the railroads themselves, and it would save an enormous amount of money in the endless tariffs which are published and never understood by the shippers, who are obliged in some cases to employ experts who are often unable to decipher what is really meant.

Rates Made According to Zones.

The Interstate Commerce Commission has spent a considerable amount of time on the brick proposition, and a

report by its Examiner Brown puts the east and west haul in zones, which plan to me looks feasible, and if the commission has nothing better to suggest, I consider this a fair treatment of the matter, as it is based on the principles that where one district has from its logical position an advantage on freights east, it would take a like disadvantage on freights west, and the same proposition could be figured out for north and south hauls, but in no case should any district be allowed to take an advantage one way and then demand the same rate the other way, which is not fair or just to either zone or district.

In fairness to all and to help get a new measure of rates based on some logical position in traffic—some united effort should be made by all shippers and demands made on the Interstate Commerce Commission that some decision be given on both classification and rate basis for all interests from a transportation standpoint. That would mean that they figure all new rates on a basis of cost of haul in comparison with other commodity rates for like nature, and that the Interstate Commerce Commission make some decision and adopt some fixed policy of rate making, which I believe would straighten out our transportation troubles for the future, and any small adjustments now made in different sections only complicate the matter. What we want is the new basis or measure of brick rates that will be fair and just to all commodities.

Brick and building material rates and the free movement of this material to all markets are the starting points to the employment of labor, as building is the starting of all improvements, and there is no industry that has had less consideration in freight adjustments in the last year than this important industry.

C. B. STOWE,

President the Stowe-Fuller Company.

Cleveland, April 28, 1922.

CHANGES IN BRICK RATES.

Those who have not yet informed themselves on the subject should look into the matter of the new rates on brick and other clay products effective July 12, for it not only means a reduction, and unifies several lines of products on a common rate, but it makes a special rate on common brick somewhat lower than that on high grade products, provided seconds or cull from the higher grades are not mixed in or shipped as commons. Get the new rates and the classification ruling from your railway office if you have not received them from some other source so that you may get the full benefit of the new rates and classifications.

ABANDONED CLAY PIT USED FOR CITY SWIMMING POOL.

It is expected that one of the abandoned clay pits of the Fulton Fire Brick Company at Fulton, Mo., which has become filled with water, will again serve as the bathing beach of the Fulton swimmers, who are without a municipal pool in which to disport. The fire brick company has permitted the use of this pool free of charge for several years, and it proves a popular place, hundreds of persons going there yearly. The pool has springs in it and besides is probably 20 feet deep in spots, making the water clear, cool and fresh all summer. The only drawback is that the depth keeps the women and children away, but steps probably will be taken to correct this and it is likely that nature has solved the problem for this year. Investigation has shown that there is more water in the pool this year than ever before, due to the heavy rains of the spring, and it is believed that some of the former low spots will now have enough water in them to make it possible for women and children who can not swim to use it for bathing purposes.

MORE ATTENTION NEEDED TO THE STUDY OF OUR LABOR PROBLEM.

THE business in the clay products industry is, on the whole, very good, and this bright period is being reflected in a great many other lines; while on the other hand, there are branches of the industrial field that have not as yet recovered from the depths of the last business depression and are at present making a game fight to recover their foothold and regain their normal position. This would mean that industry as a whole is not as yet going at full force.

In view of this fact, upon studying the labor situation, some very startling facts are encountered. Many plants are at present experiencing great difficulty in finding men suitable to establish a complete personnel that can be called efficient. Were this condition true, the country as a whole would be in the throes of chaos. According to figures available at the present time there are upwards of a million unemployed, and this number will be very quickly absorbed when industry has fully recovered its feet. Within this figure is also represented the elements that will not work even when business is at its highest point of prosperity. With this in mind the labor situation needs and really deserves some consideration.

From present indications, clay products will be in great demand in the next decade or more. Labor difficulties should be studied and remedied, so our slogan can be "production at the highest peak." Industry can not afford at present to be mixed with labor perplexities. It can be readily deduced that, even under present conditions and the accompanying shortage of labor, there will be an even greater shortage when business has more nearly approached the better times. More often than not, the largest majority of labor difficulties can be directly traced to the fundamental thought of a lack of understanding on the part of labor of the actual facts and conditions, with the possibility of an improper handling by foremen, who are devoid of the proper tactics to be used.

Often the prime cause of dissatisfaction among wage earners is a lack of knowledge of the underlying business conditions. The manufacturer who has been successful always has a high regard for the importance of keeping himself informed on all conditions, not only in his own business, but the whole general outlook as well. He will go to no end of trouble and will use every available means to get this information, due to the fact that it is very necessary to the successful conduct of the business. With knowledge thus gained, he is able to enter a conference, either wage or otherwise, with a firm grounding in facts and information. This same man, in view of the fact of having a firm grounding in information, can ask his co-workers to accept a cut in wages, an increase in hours or other working change, which would fit the fundamental fluctuation in the business situation.

With the ever-changing business situation, it is quite often forgotten that the employees on the other side of the question are not so well informed of the multiplicity of changes, and the immediate trend. The employee, as a rule, forms his opinions and ideas from more or less inaccurate reports as appear in the daily press and these reports are very often distorted and biased, due to their being given by unions, and sometimes come from unreliable sources. It can be readily seen that the employer and employee do not view the same subject in the same light. Were it possible for both to have the same source of information, reactions between the employer and employed would more often than not, be more in coincidence. A mistake often made is that the employer tries to force conclusions upon the employees from a point of superior knowledge.

It seems that a very important step and one that would

pay dividends in a short time, would be one in which the employer takes the time to begin to educate his employes in fundamental principles of business and a full realization of economic conditions. The mistaken idea among labor is more dollars and less hours per day, while it should be the reverse—a reasonable share in the products of his labor.

Were it possible to give the wage earner a little more credit for using his head, than has been the custom in the past, and a means provided whereby he could form his own opinions from sources that are reliable, many of the troubles attendant upon labor employment could be almost entirely foregone.

Another question to be given some thought, is the matter of a foreman, and has a very important bearing upon the element of labor situation. This is due to the fact that he is always in contact with the men and it becomes highly important that he knows how to handle them. One of the most prominent outstanding features for dissatisfaction of labor is due to the foreman feeling his authority and abusing the men. With the question of foreman perfectly satisfied, the working conditions of the men will be well settled.

Upon the complete revival of industry, and a labor shortage to be avoided, it would be well to begin now to work up a better understanding with your co-workers, as a good understanding with your wage earners means better harmony and a steady flow of production.

"HENDRICKS' COMMERCIAL REGISTER OF THE UNITED STATES."

In these times of standardization we are always glad to see a publication adopt the size which is becoming the generally accepted standard. The latest convert to come to our notice is "Hendricks' Commercial Register." In its new size, 8½x11½ inches with a type size 7x10, it presents a greatly improved appearance. The text matter has been opened up, leaving a space between the columns, making it more readable as well as more attractive and giving ample space for checking and memoranda. The larger page taking more matter naturally requires fewer pages and gives a thinner book, which in turn makes it easier to handle. The publisher's statement in the front says that although the increased size of the page takes 25 per cent more matter and would normally reduce the number of pages from 2,800 to 2,100, enough new matter has been added to make more than 2,300 pages. This well reflects the energy of the publishers in the performance of their task of securing new information and keeping the book up to date.

Its lists completely cover the electrical, engineering, machinery, building, manufacturing, chemical and similar industries. While we have not been able as yet to thoroughly check up the book, we have noted a few changes which appear excellent, for example, the subject of "Twist Drills" has been handled in a more comprehensive manner than we have ever noticed in any similar publication and which is new in this edition. The same is true of "Fire Doors" and "Electric Lamp Sockets."

For years we have used "Hendricks'" in our work and have found it so comprehensive without "padding," so well arranged and thoroughly indexed for instant reference that we can hardly do without it and have no hesitancy in recommending it to our subscribers as an invaluable guide in both their purchasing and selling.

Life would not be worth while were there not problems to solve and difficulties to face, and the thing that makes a man worth while is the facing of difficulties and the solving of problems.

DETROIT BRICK AND BUILDING NEWS.



JUNE CONSTRUCTION shows a heavy increase as compared with the same month of last year.

A total of 2,868 permits issued by the department of building in June aggregated a cost of \$8,274,184, of which 2,205 were for new work, costing \$7,570,197, and 663 for alterations and additions, costing \$703,987. These figures compared with 1,580 permits costing \$4,348,816 in June, 1921, of which \$3,506,203 were for new work, and \$842,613 for alterations and additions.

Of the new work, 1,814 frame structures cost \$2,710,872, while 221 brick veneer cost \$1,574,700; 144 brick and tile \$2,481,825; 22 cement block \$17,800 and four reinforced concrete \$785,000.

The industrial situation in Detroit is tightening up materially. Reports from the Employers' Association of Detroit and also other employment agencies show that more than 250,000 men are now working in the larger factories and that skilled labor is getting scarce.

The Mason Contractors' Association was attempting to hold the bricklayers down to \$1.12½ per hour, but with the greatly increased demand for that kind of labor, the scale has been climbing until now the members of the association are carrying advertisements in which they offer \$1.35 and even \$1.50 per hour.

What is true of the bricklayers is also true of the plasterers and other building mechanics. A shortage of labor is bound to become acute if building continues to increase at its present rate in this city.

The material men state that they are keeping up with the demand to a certain extent but that in the face brick and other lines, the material situation is getting them all nervous.

Naturally, with the demand increasing steadily, there is a tendency to increase prices, and those contractors who loaded up with a lot of cheap work at the beginning of the year are now wishing that they had not done so.

Better prices are now possible and the wise bird is the man who did not sharpen his pencil too keenly when most of the contractors were hungry for work.

Reports from the offices of the architects as shown by the weekly summaries prepared by the Builders and Traders Exchange show that new work in prospect is sufficient to keep local contractors busy for the rest of the year.

The number of large apartments coming out is particularly striking and they are not only of a large nature but of a costly character. Most of them are being financed by bond issues.

Edwin L. Downs, president of the Builders & Traders Exchange, believes that building is to continue decidedly active for the rest of the year. His connection with the United States Radiator Corporation, as well as with the Builders, gives his opinion weight and it coincides with the opinions of a number of other men who are in close touch with the local situation.

John S. Haggerty, of the John S. Haggerty Brick Co., has taken a flier in radio and owns 1,000 shares of the Detroit Radio Development Co., recently incorporated here with capital stock of \$15,000.

The Bigelow Clay Products Co., 53 Buhl Block, has increased its capital stock from \$200,000 to \$350,000. The company has uncovered some remarkable clay in Michigan and its officers believe that they have found something that will make the other clay manufacturers sit up and take notice.

WOLVERINE.



SOME FIRE BRICK HISTORY.

AN INTERESTING PAPER on fire clay refractories, which was presented at a meeting of the Louisville Division of the National Association of Stationary Engineers by C. E. Bales, chemist of the Louisville Fire Brick Works, has been printed as a series of articles in the *National Engineer*, as it deals more specifically with refractory material for use in boiler furnaces.

Mr. Bales has gone into the subject pretty thoroughly, giving the statistical progress of fire brick production in the United States from less than five million dollars in 1897 to over fifty million in 1918. The figures showing a steady, and during the past decade, rapid growth of the refractory branch of the clayworking industry.

Going into the history of the industry, especially in relation to its development in Kentucky, Mr. Bales says:

"It would be impossible to state when and where the first fire brick were made, but it is recorded that Tubal Cain was known as an iron master in 3875 B. C. An iron tool has also been found in Egypt which is probably 5,000 years old, and it certainly seems therefore, that some type of refractories must have been known at least for 6,000 years, because without some form of heat-resisting material it would have been impossible to smelt any iron ore.

"It is known positively that the mediaeval alchemist was quite expert in the making of crucibles, retorts and small furnaces. In the fifteenth century considerable progress was made in the metallurgical and ceramic industries and this was made possible by the use of crucibles and furnaces made of heat-resisting materials. As clay is the most common and widespread substance capable of resisting heat, it seems that mediaeval man would undoubtedly have known something about its properties and would have used it in lining his crude furnaces.

"In the United States the first fire brick were probably made in New Jersey about the year 1812, but it is not known just where the original plant was located. In 1825, however, a plant was established at Woodbridge, N. J., and several years later the industry spread to Ohio, Pennsylvania and Maryland.

"In 1842 James Glover discovered a deposit of high-grade fire clay at Bolivar, Pa. He established a small plant and the brick manufactured by him were of such excellent quality that they soon earned a good reputation with the furnacemen of Pittsburgh. A few years later the manufacturer of fire brick was started in Missouri and although the industry developed gradually it is now one of the foremost industries of the state.

"Fire clay was mined in Lewis county, Kentucky, in 1871

and shipped to fire brick manufacturers in Cincinnati, but the industry in Kentucky did not amount to much until in the early 80's. In 1870 Messrs. K. B. Grahn, S. Eifort and J. Staughton, principals of the Tygart Valley Iron Company, bought 10,000 acres of land in the vicinity of Olive Hill, Ky. They had planned to erect iron furnaces to smelt the local ores but the project had to be abandoned, as the proposed division of the Chesapeake & Ohio Railroad through this region was not completed until 1883. The land was then divided. Mr. Grahn took his allotment in the vicinity of what is now Grahn Station. Mr. Eifort took that part in the vicinity of Olive Hill, and Mr. Staughton's allotment was west of Olive Hill. Shortly after this, Mr. Eifort opened up a fire clay mine on his property and shipped the raw material to various plants in Pennsylvania and Ohio. Its real value was recognized at once, and there was a spirited demand for Kentucky clays.

"About this time Mr. Grahn also began shipping considerable fire clay, but in 1889 he established a small plant in Louisville to manufacture high-grade fire brick from Carter county clay. This was known as The Louisville Fire Brick Works, and the brick manufactured by this company were of such excellent quality that the plant had to be enlarged to take care of the increased volume of business. This company has gradually grown until it is one of the most important factors in the fire brick industry. At present it owns a large plant in Louisville and two plants and several clay mines at Grahn, Carter county, Ky. The present daily capacity of this company is 100,000 9-in. brick. About 1890, Mr. Eifort sold his land to what is now known as the General Refractories Company, and in 1895 they erected a plant at Olive Hill. Since then the industry in Kentucky has been steadily growing, and it seems to have an exceptionally bright future."

In describing fire clay and its origin, Mr. Bales says that fire clay is a term applied to those natural earthy substances whose important property is their ability to resist heat. He says, though, it is rather unfortunate that the term fire clay is so loosely used, because in one part of the country it may mean a clay with a fusion point of 2,700° F., while in another district it may mean clay that will successfully resist 3,300° F. Then he shows the different classification of fire clays, some being plastic, some having tensile strength and high shrinkage, other practically no plasticity with low tensile strength and low shrinkage. Incidentally he mentions that the term kaolin, which is applied to some of our pure clays of this class, comes from Kauling, the name of a high hill in China where there was early developed the making of what we know as chinaware.

Then, following a description of how refractory clays are probably formed, he says there are large deposits in

Kentucky, Pennsylvania, Ohio, Missouri and New Jersey. Those in New Jersey, he says, are of the cretaceous age, while the others are carboniferous, of which he describes three types, the flint or non-plastic clay, the semi-flint, and the plastic clays. The flint and the semi-flint are more refractory, but as they are largely implastic it is necessary to mix them with the plastic clay to work them successfully into brick.

Then he describes in some detail the processes of mining, grinding and burning, which on the whole are fairly familiar to those engaged in the clayworking industry, especially the wet pan grinding, the molding, drying and burning.

WATER POWER AND STEAM.

A compilation of figures on the kilowatt-hours of electricity produced by utility plants indicates that at the present time practically half as much is furnished by water power as by steam power. The total in this compilation shows a little more than three million kilowatt-hours per month with water power furnishing a ratio of about 1 to 2, as compared to fuel or steam power. The states which show up most conspicuously in water power are California and New York.

WELLER REPRESENTATIVE TOURING EUROPE.

Mr. W. H. Kent, vice-president and general manager of the Weller Manufacturing Company, left Chicago on June 28 for an extended trip throughout the European countries. Investigation will be made as to the possibilities of future trade; also inspection of Weller equipment installed in a number of the large plants. At the present time there are a number of projects contemplated in which elevating, conveying and power transmitting machinery will be an important factor.

A CHANGE OF BASE.

Mr. Fred H. Schwetye has resigned his position with the Laclede-Christy Clay Products Co. of St. Louis and has accepted the position of secretary of the Grand View Fire Clay Co. of that city. Mr. Schwetye was in the employ of the Laclede-Christy Clay Products Co. for sixteen years, the last four years having filled positions as General Superintendent of the Christy and Laclede plants. In his new position Mr. Schwetye will be in charge of mines and plant of the Grand View Fire Clay Co. This firm is preparing special clay mixtures for glass house, zinc and foundry trade, and high-grade refractory materials.

MALAYA GIRLS ARE SKILLED POTTERS.

Because it represents an entirely new industry to Malaya, the formal opening of the pottery works at Gopeng, India, was made the occasion of somewhat elaborate ceremonies. The plant, which is situated about 16 miles from Ipoh, is equipped to handle all the processes from refining the crude clay to the decoration of the completed piece.

Casting and jollying are the processes used, permitting a comparatively large output with labor that is not yet thoroughly trained. Teapots, jugs, ewers, and basins are already being turned out, notwithstanding a few weeks ago the Malay girls employed in the casting room had never seen a pottery. As the available labor becomes more skilled, the production of porcelain ware in bulk is contemplated.

All the materials required for pottery are found within three miles of the works. Besides supplying its own clay

requirements, the company ships china clay to cotton mills in Bombay and paper mills in Calcutta. The barrels for packing the product, it may be mentioned, are made at the works.

The establishment of this new industry in Malaya has aroused widespread interest.

SOUTH AMERICAN WEST COAST A BIG COMING MARKET FOR AMERICAN BRICK.

Alfred T. Marks.

THE west coast countries of South America, especially Chile and Peru, are said to furnish a remarkably potential market for American brick. In fact, the demand for United States brick in these countries at this time is rapidly increasing, the brick imports of Chile and Peru from this country in the ten months ended May 31, 1922, being close to double those for the corresponding period ending May 31, 1921. With the general commercial awakening and greatly improved financial conditions now prevailing in those countries, it is pointed out by American authorities familiar with our exports of building materials that the opportunity is at hand for capturing these markets by our brick manufacturers.

Along this line, the writer asked the views of Dr. Sancho Garrivo, publisher of "Boletin de la Sociedad de Fomento Fabril," of Valparaiso, Chile, who visited Washington the latter part of June. Referring to the possible market in western South America for United States brick, Dr. Garrivo said: "The next few years should see a greatly increased demand for United States brick in Chile and other countries on the west coast. This for two reasons—first, there is a very notable trend of favor for brick as a building material and away from the old adobe and sand-stone. In fact, there is very little building there at this time with either adobe or the expensive stone, which latter material is far above the means of the masses of the people. The second reason why brick is getting a permanent foothold is that it is coming into the country much more freely than ever before, and our people are becoming better acquainted with its merits as a building material.

"If you will glance at your map you will note that it is a comparatively short run from your Gulf and lower Pacific ports to the chief ports of the South American west coast. The Panama Canal makes our countries accessible to your South Atlantic coast cities, also, so that the expense of delivery in South America does not much exceed that of a long inland haul in the United States. Quite a few vessels in the past two years which are in coastwise trade, bringing cargoes of nitrates and other products from Chile to the United States, carry brick down as ballast.

"Up to this time, as far as my observation goes, the demand seems to be practically all for the red or salmon building brick of the less expensive grades, although it is quite likely that the fancy face brick will come into general use.

"Practically no brick is being made in either Chile or Peru, although the next few years will doubtless see some progress along that line. This, again, would afford a market for your manufacturers of brick-making machinery and equipment.

"With the best of friendly feeling existing in my country toward the United States and its products, it is but logical that we should look to you for our brick as well as all other building materials. One of the objects of my visit to the United States at this time is to arrange for placing several structural iron orders in Pittsburgh which will total close to \$200,000."

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,418,658. Method and Means for Brick Hacking. James B. Ladd, Ardmore, Pa., patentee.

The method of loading and hacking bricks, which consists in the following steps, moving bricks in the direction of their length, bringing the bricks to rest abutted end to end in rows greater in length than a car, assembling said rows in parallel relationship, sufficient in number to form a layer the full width of the car, and transferring to the car at one operation, such part of said assembled rows as shall form a complete layer for the car.

No. 1,418,880. Brick-scoring Mechanism. William F. Richey, Ashabula, Ohio, patentee.

A mechanism for scoring the faces of bricks or blocks prior to the baking thereof comprising a fixed rest, standards disposed respectively on opposite sides of the rest and interconnected at their upper ends to provide a frame, rotary combs disposed on opposite sides of the rest and between it and the standards, the combs being provided with shafts, brackets in which the shafts of the combs are rotatably mounted, the said brackets being provided with threaded shanks extending through longitudinal slots formed in the standards, clamping nuts carried by the threaded shanks and engaging the standards on opposite faces to provide for vertical adjustment of the brackets, a transverse shaft having geared connections with the shafts of the combs, flexible means for imparting rotary motion to said transverse shaft, and adjustable bearing brackets in which said transverse shaft is journaled.

No. 1,418,669. Tunnel Kiln. Ellsworth P. Ogden, Columbus, Ohio, patentee. Patent assigned to John B. Owens, Zanesville, Ohio.

A tunnel kiln provided with a main stack or fan and also having an auxiliary stack or fan independent thereof by which special gases and vapors which have been introduced into the kiln for special purposes may be removed therefrom without resort being had to the means for inducing the main draft.

No. 1,418,648. Refractory Material and Process of Making Same. Robert W. Hull, Hingham, Mass., patentee.

A refractory material for surfaces subjected to intense heat comprising waste material left after concentrating disseminated chrome ore containing a mixture of silica, serpentine and olivin and united by a binder.

No. 1,419,198. Tile-molding Machine. Byron L. Bacot, McComb, Miss., patentee.

In a tile molding machine, a frame, corner blocks in the frame, screws threaded vertically through the corner blocks, cross strips carried by the screws at the respective ends of the frame, and a pallet seating on said cross strips.

No. 1,419,713. Hollow Building Block. Philip H. Bevier, Brooklyn, N. Y., patentee.

A hollow building unit comprising cellular side members, cross webs unitary with the side members, and other transverse webs at one end of the block and joined to the respective cellular members and to one of said cross webs by a plurality of webs, the length of each transverse web exceeding the cross sectional thickness of one individual cellular side member and said transverse webs producing on the end face of the block a plurality of mortar beds of cellular formation the width of which exceeds the cross sectional thickness of the cellular side members.

No. 1,419,805. Brick Wall Construction. Albert D. Bigler, Clearfield, Pa., patentee.

A building block having a rear vertically straight side, a flat top, a front lower depending projection constituting the lower front terminal of the block, and an upper downwardly beveled corner portion at the front, the front side of the block being smooth and sloping downwardly and outwardly from the lower terminal of the upper bevel to the lower terminal of the projection, a recess being formed in the bottom of the block from the rear straight side of the block to and continuing into a beveled rear side of the projection, the beveled rear side of the projection being adapted to snugly fit over the upper bevel of an adjacent similar block and the space providing means for a filling of cementitious material between the bottom and upper sides of adjacent blocks.

No. 1,420,020. Tile Construction. Eugene Ceriat, Los Angeles, Cal., patentee.

In a clay tile structure, units having L-shape cross sections, the longer of the shanks forming the outer and inner surface of the structure, the shorter of the shanks forming the engaging members between the surfaces, the longer shanks having means to engage for forming flush outside surfaces, the shorter shanks having cut-out portions to form horizontal passages in each of the layers of the structure.

No. 1,420,018. Slag-brick Machine. Charles T. Bray, Salt Lake City, Utah, patentee.

A slag brick machine including a horizontal rotary distributor provided at one end with an opening to receive slag from a furnace and having at the other end a plurality of circumferentially spaced outlets adapted to be successively brought to the bottom of the distributor for discharging the slag, an endless conveyor arranged to carry successively a plurality of molds beneath the discharging outlets, gearing connected with the conveyor and the rotary distributor, a friction disk connected with the said gearing for actuating the same, a drive shaft having a flexible coupling, a friction wheel mounted on the drive shaft and arranged to engage the friction disk.

No. 1,420,796. Brick-making. George A. Warner, Detroit, Mich., patentee.

In a molding apparatus for forming bricks or similar articles, the combination of a mold provided with a plurality of compartments and having side walls that are corrugated or fluted, and a member having matching corrugations or flutings that can be passed over the mold box to corrugate the plastic bricks, for the purpose specified.

No. 1,420,810. Interlocking Brick. Guy M. Bean, Los Angeles, Cal., patentee.

A brick having a tapered projection and a correspondingly shaped socket at one face and arranged end to end and located inwardly of the edges of said face of the brick.

No. 1,420,296. Drying Kiln. Rolf Thelen, Madison, Wis., patentee.

The combination with a progressive drying kiln provided with suitable means for the movement through the kiln of the material being dried, said material being edge-stacked crosswise on suitable trucks, of an exhauster fan, means for driving said fan, air baffles, means for conditioning the air upon entering the kiln, and means for conditioning said air after each downward pass.

No. 1,420,093. Machine for Making Ceramic Masses Into Tiles. Erich Gerbel, Mannheim, Germany, patentee.

In a machine for making disk-shaped objects and the like from ceramic masses, a vertically adjustable support for a mass block; means for truing the mass; means for successively cutting disks from the mass and means for receiving

and supporting the cut disks, the said adjustable support and the said disk cutting means being arranged for relative movement toward and from each other.

No. 1,420,284. Refractory Silica Brick. Orazio Rebuffat, Naples, Italy, patentee.

The process of rapid conversion of quartz into its allotropic varieties of lower specific gravity by incorporating therein small quantities of the radicals of acids nonvolatile at high temperature and calcining the same and recovering said allotropic varieties of said quartz of lower specific gravity than quartz, substantially as set forth.

No. 1,421,155. Tunnel Kiln. George W. Booth, Islington, Ontario, Canada, patentee.

In a tunnel kiln provided with a combustion chamber in its wall beside the firing zone of its tunnel chamber; a flue forming a communication between the combustion chamber and the upper part of the tunnel chamber; an equalizing chamber between the combustion chamber and the tunnel chamber having an opening at its lower part communicating with the interior of the tunnel chamber and an opening at its upper part communicating with the flue aforesaid; and means for causing the products of combustion to flow either from the flue aforesaid into the top of the tunnel chamber and thence into the equalizing chamber by way of its lower opening or else into the top of the equalizing chamber through its upper opening and out of its lower opening into the lower part of the tunnel chamber.

No. 1,411,871. Kiln. Jerome B. Riffle and Louis H. Hartman, Urichsville, Ohio, patentees.

In a kiln as characterized, a flue disposed centrally of the kiln, furnaces disposed at opposite sides of the kiln and having heat conducting passages connecting said centrally disposed flue, a heat deflector disposed within the lower portion of said centrally disposed flue and interposed between the opposed ends of the said heat conducting passages, exit flues extending radially of the kiln beneath the floor thereof and in communication with the interior of the kiln through openings formed in the floor of the latter, said exit flues having laterally extending branches disposed inwardly of and parallel to the vertical wall of the kiln and in communication with the interior of the latter through openings formed in the floor thereof, stacks spaced around the top face of the vertical wall of the kiln and having the flues thereof extending downwardly within the latter.

Trade-marks and Designs Patented.

No. 139,685. Twin City Brick Co., St. Paul, Minn. Trade-mark registered for name "Golden Rod" for brick.

No. 147,630. W. E. Mushet, San Francisco, Cal. Trade-mark registered for name "Wemco" for fire brick, furnace tile and baffle tile.

POSTAGE ON PERIODICALS.

It used to be that we had a simple and very favorable pound rate on second class mail matter which covers such postage as newspapers, magazines and trade papers. And the reading public got the benefit of this in low subscription rates and considerable in the way of free sample copies. Of late years not only has the postage rate been multiplied a few times on postage, but it has been made complicated and difficult until there is some organized protest among publishers to get relief in the form of simpler postage laws and some let down of the cost. The public may not seem to be interested in this fact but it is really a part of the public's fight in the final analysis, because it is the readers and advertisers who must pay this bill through increased rates. Therefore if you as one of the reading public are appealed to help get a modification of these rates on periodicals it is to your own interest to lend a hand.

Written for THE CLAY-WORKER.

IN THE PHILADELPHIA BRICK MARKET.



RICK IS EXTREMELY SCARCE in this city at this time. Only one large manufacturer in the entire city claims he can take care of any orders he receives. All others declare they can scarcely take care of orders filed some time ago, and will not take any orders at this time with a promise of definite delivery at a specified time. Many large operations are held up because of

the small supply for such a great demand.

Some out-of-town manufacturers were questioned recently as to the possibility of supplying some dwelling operation builders, but they declared that the freight rates had them beaten before they started to compete for some of the city's demands.

William R. Chapman, Sr., head of the Philadelphia Brick Company and the Kerbaugh Lime Company, died June 15 at his summer home in Atlantic City. He was 85 years old.

Although he continued as head of the brick and lime companies, he retired fifteen years ago, leaving the management of the business to his son, William R. Chapman, Jr. Mr. Chapman was ill only a few days. He is survived by his son and three daughters.

With a total of 11,603 operations involving an expenditure of \$52,428,645, the greatest half year building boom in the history of this city was recorded with the end of June.

All construction records were broken. Compared to the first half of 1921, with its total of \$16,616,810 expended for building, the corresponding period shows an increase of more than 300 per cent, or \$34,811,635. The closest to this year's total was in 1920, when the estimated cost was \$38,538,245. This amount, however, accounted for only 6,946 projects.

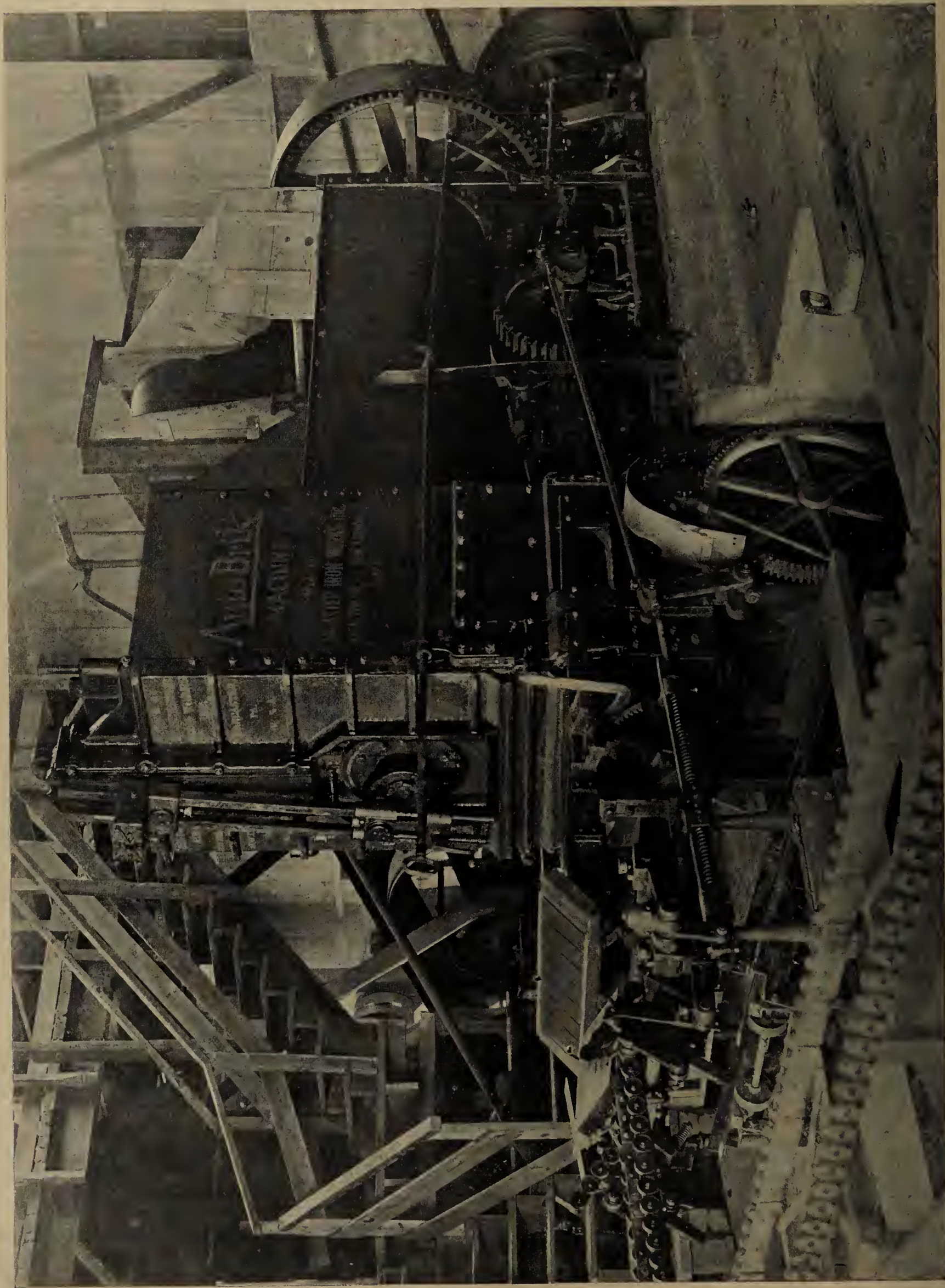
Construction of homes was the outstanding feature of the phenomenal activity.

Virtually half the work was on dwellings, a total of 5,113 houses was started at an estimated cost of \$25,069,289. More than 95 per cent of the houses were two-story and of brick construction. The tremendous character of the dwelling construction activity may be more fully appreciated by comparison with the totals of the two preceding years. In all of 1921 about 220 houses were erected, while in 1920 the total was 1,296 houses. An additional factor in the building boom has been the Sesqui-Centennial Exposition to be held in 1926, and the Delaware River Bridge projects, local, industrial, business and financial interests launching big enterprises, with a view to the expansion which is already in view.

Many big projects are looked forward to, with the idea of the World Fair in mind. City councils, at this time, feel there is not enough time to get such an affair under way in the proper fashion, and want the exposition postponed until 1927. There is much opposition, however. Many merchants and public-spirited citizens feel that to postpone the fair one year will practically kill it. The name, the most important feature of the fair, will have to be changed, because this city will be 151 years old in 1927. From all indications the date will not be changed.

Builders are looking for a very busy fall season, and the great number of building permits being issued by the Bureau of Building Inspection is proving that such will be the condition. Brick manufacturers declare they will be better able to take care of the fall demand, as they are increasing the capacity of their plants with all possible haste.

A QUAKER.



The AutoBrik Machine in Operation on the Plant of the Lancaster (Pa.) Brick Company.

BOOSTING THE BRICK GAME.

An Unusual and Effective Bit of Publicity that Tells of Growing Importance of Building Brick Industry.

A FULL PAGE feature story boosting building brick in general and the Lancaster Brick Company in particular appeared in a recent issue of the Lancaster Daily Intelligencer. The story was quite elaborate and touched on brickmaking in ancient days in Babylon and Egypt and told of the progress of more recent times in Europe and England, and closed with an interesting account of brickmaking in America from the early colonial period. It was such a story as interests the general reader and tends to engender a greater respect and high regard for the brick industry. It was illustrated with a large cut of the "Auto-Brik" machine shown on the opposite page.

The Lancaster Brick Company has recently installed one of these machines and finds it does away with much hand labor and permits the production of a much larger daily capacity more regularly and at lower cost than by the older type of brick machine. Instead of it being necessary for one man to take the molds out of the machine, and another man to sand them and put them back in the machine, this work is all done automatically by the machine itself. The yard superintendent insists that they not only make more brick than formerly, but they make better brick due to the fact that the clay is molded stiffer, and as a result the brick retain their shape and are stronger, with better faces and edges, than was the case when the older type of machine was used when the bumping and dumping was being done by hand. Another advantage of the Auto-Brik machine is that it molds seven brick at a time instead of six, in itself an increase of one-sixth over the old process, and it is stated eight or nine brick may be made per mold if that is desired. The Lancaster Brick Company employs thirty-five men, and their production runs 60,000 brick per day, winter and summer.

In olden days brickmaking and pottery making was considered a secret industry, the knowledge of which was jealously guarded and handed down from father to son. In these days, that idea no longer prevails. At any rate, it does not at Lancaster, for the Lancaster Brick Works is open to inspection at all times. Visitors in any way interested in brick or brickmaking are always welcome, and are gladly shown every detail of the process of making the best building material in the world, common building brick. The Intelligencer voices pride in the fact that the entire mechanical equipment of the plant is a home product, being furnished by the Lancaster Iron Works, which succeeded the Martin Brick Machine Company, founded in 1858, and which for a half century was a leading factor in the brick machinery business in this country. Mr. James P. Martin, a son of Henry P. Martin, the founder of the business, is in charge of the brick machinery department. The story is an interesting one and brickmakers of other localities might profit by emulating the example of the Lancaster Brick Company by giving the public similar interesting information in regard to the brick business through the columns of their daily papers.

BRICKS FROM DOLOMITE.

At the ceramic experiment station, Columbus, Ohio, the Bureau of Mines has made standard sized bricks from calcined dolomite and from raw dolomite using 10 per cent of the flux Fe_2O_3 , Al_2O_3 , SiO_2 . Calcined dolomite was found undesirable for making into bricks as the mud slakes so rapidly, and on account of enormous shrinkage during drying and

burning, all samples cracked badly. Raw dolomite, together with 10 per cent flux, gives excellent promise. The bricks so burned to 1450°C . were sound, of high density and have not yet shown signs of slaking when subjected to the boiling test.

DETROIT BRICK PLANT DESTROYED BY FIRE.

The brickmaking plant of Porath Brothers, located at Springwells, the brickmaking suburb of Detroit, Mich., was entirely destroyed by fire which started Sunday evening, July 9. The flames were greatly increased by the ignition of a large tank of oil at the plant after the fire had gained considerable headway. In fact, the fire is supposed to have started from a defective oil burner. The loss is estimated at \$50,000.

OHIO BANKER BEQUEATHS BRICK HIGHWAY TO HIS NATIVE CITY AND COUNTY.

"Some men give their money to colleges, others bequeath theirs to hospitals and some found libraries, but it seems to me that no one can leave behind a more serviceable monument than a permanent brick highway which, for a generation, will serve friends and neighbors in his home community."

Chatting with a friend on a train several years ago, the late David Presley Campbell, Utica (Ohio) banker, made the foregoing remark.

Mr. Campbell died suddenly, March 24, 1922, and today a brick road, extending four miles from Utica, in Licking county, to Hamilton Crossing in Knox county, is his memorial. Among Mr. Campbell's donations toward the building of this unique monument was \$30,000 for brick.—Dependable Highways.

FLUORSPAR INVESTIGATIONS.

R. B. Ladoo, mineral technologist of the U. S. Bureau of Mines, recently spent a month in the southern Illinois and western Kentucky fluorspar field in order to complete the investigation of the fluorspar industry. The outstanding feature of the fluorspar situation is that our known reserves are very low, and, unless new deposits are found, fluorspar will be very scarce and expensive within a few years. The development of possible substitutions is being considered. The objects of the fluorspar investigations is the eventual preparation of a bulletin on all phases of the fluorspar situation.

MICA SPECIFICATIONS NEED REVISION.

Many specifications for sheet mica call for India mica. This is due partly to the high quality of India mica which establishes it as a standard, and partly to prejudice against domestic mica due to improper grading and trimming. A rigid specification which rules out all but India mica certainly discourages development of the domestic industry, and domestic producers should endeavor to have specifications modified to read "India mica or its equivalent." This would give the domestic producer a fair opportunity to market a product of equal quality with the imported mica, and would encourage better grading and standardization of domestic mica.—From Serial 2357, issued by the Bureau of Mines.

The coal miners' unions and some of the railway unions have been furnishing some good reasons lately against collective bargaining as well as demonstrating some dangerous radical tendencies.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Three—Drying Brick With Waste Heat.

By W. D. Richardson.

A MAN WHO presents to our Association a paper on any operation of brick manufacture, describing his methods and results, and thereby also inducing others, in the discussion that follows, to tell how they do it, makes a valuable contribution to the industry and shows that spirit of co-operation and appreciation of duty that should characterize every member of the N. B. M. A. Even though the method described may contain little or nothing that is new, yet such information is constantly being sought by someone and the paper and discussion in convention are helpful to many.

The subject of utilizing waste heat for drying, so clearly presented by Mr. Sturgeon in its application to up-draft kilns, is one that is of perennial interest to brick manufacturers. Especially, so long as the fuel-wasting periodic kilns are used, the heat passing out of the burning kilns and the heat stored up in the kiln and brick after the burn is finished should be utilized to the fullest practical extent, and no one need think that he has reached perfection in this. Improvement will continue to be made in the method of removing the heat from kiln and delivering to dryer and, especially, in the method of applying the heat in drying. Most brick dryers are as inefficient as the kilns in heat wasted, in time lost and in damage to product.

The peculiar feature of Mr. Sturgeon's process is the taking of the heat from the burning kiln into the dryer, for about as long a time as from the cooling kiln. This might not be practical in many cases, since some want their common brick to be free from scum and some must protect the dryer operator from sulphur and smoke and the setters from black soot. Moreover, as Mr. Sturgeon states, there is the deterioration of cars to be considered, and he might have added also the damage to the fan. The heat from burning down-draft kilns can be utilized in the same way and the writer has seen this done, also the heat from boilers, mostly in the South, where the laborers have black skins by nature, but many of us would not subject our employes to such a nuisance, and in the North few white men would submit to it.

Mr. Sturgeon gives the cost of drying "by direct heat, with coal three to four dollars a ton, sixty to seventy-five cents per thousand brick." By "direct" heat we suppose that he means heat from the furnace and circulated by the fan mentioned. The cost of operating a waste heat system should not be compared with such a dryer, but with a radiated-heat dryer with furnaces under the tunnels. With a good radiated heat dryer the cost of drying, under the conditions mentioned, should not exceed thirty-five to forty-five cents per thousand brick. In Mr. Sturgeon's statement of the saving effected does he figure the cost of operating the fan? This is often left out of the calculations of waste-heat drying, but is no small item under average conditions. The cost for power to operate a fan to dry forty to fifty thousand brick a day will be from fifteen to twenty cents per thousand brick. So the saving from using waste heat, with coal at three to four dollars a ton, would be not more than twenty to twenty-five cents per thousand and may be less, not considering the fact that in any waste heat system, especially where up-draft kilns are used, some auxiliary heat must be provided for starting and if the heat from burning kilns is not utilized, there will be additional heat to be supplied every kiln, so that it is doubtful

if, under average conditions, there would be any saving in using waste heat from cooling up-draft kilns over the most economical form of radiated-heat furnace dryer.

Mr. Steadman made the statement that in his method of taking the waste heat from a cooling up-draft kiln he got back 50 percent of the fuel that was used in burning. What he doubtless means, of course, is that with his former method of drying brick he used 50 percent of the coal required for the burning. If so, he must have had a very uneconomical dryer or heating system.

Waste Heat From Down-draft Kilns.

Mr. Gregory presented figures showing that there is enough heat stored up in the kiln and in the burnt brick to dry an equal quantity of brick. Similar calculations have been made and published several times, but they do not mean that when such a system is installed in the usual manner that there will be enough dry brick every day to keep the kilns in operation. Here we come up against the confusion that always arises in such discussions. A man says that he is drying so many thousand brick a day. This often means merely that he is setting in kilns from dryer that number of brick a day, but investigation may show that in the latter part of the day, especially in the latter part of the week, many of the brick set are far from being dry.

Likewise, though theoretical calculations show that there is enough heat in kiln of brick just burned to dry the same quantity of bricks, yet it does not mean that under usual conditions that number of brick can be thoroughly dried with this heat. It is not easy to make any calculations of general application that will show the amount of this heat that is lost in conducting it from kiln to dryer nor the heat lost in the dryer, as usually constructed and operated. First, we often see a sheet-iron goose-neck connection to kiln radiating heat into the atmosphere like a stove. Then, in some cases, the underground duct to dryer is not insulated from ground moisture and a large amount of heat is lost in evaporating water, or the duct may be so near the surface that it is radiating heat its whole length. Sometimes also one sees a fan with the steel housing unprotected, constantly radiating heat. Moreover, very rarely is the heated air when it reaches the dryer economically distributed and circulated, so that it often emerges with only a small degree of saturation. Therefore, such calculations as presented by Mr. Gregory are often deceptive and not realized in practice.

Yet Mr. Dunwoody stated that at his Macon plant he has waste heat for "25 percent more brick than he burns," though in answering the question of President Wilson he said "sometimes we run out of waste heat." This shows how difficult it is to get all the facts in the case. Possibly the man making off-hand statements in such a discussion does not himself know all the facts. And then again there is that loose expression, "dry brick," which might be modified by saying that the brick are generally dry or partially dry, every man making his own interpretation of the terms.

The above remarks are not made to discourage anyone from planning to utilize waste heat from periodic kilns, but there is no use deceiving himself by thinking that he is thereby getting anything like the economy from periodic kilns that he would get from continuous underground ducts, as Mr.

Dunwoody has. It must also be noted in this connection that with a continuous kiln the heat of cooling compartments is utilized for drying, in some cases no other heat being employed. While all of this is not waste heat, that is, heat that could not be used in heating air for combustion or in watersmoking, yet it makes the most economical system. In the car tunnel kiln there is a large amount of waste heat from the high temperature of the escaping products of combustion and this is utilized in drying. Dr. Seger, many years ago, calculated that it takes as much fuel to dry a kiln of brick as it does to burn the same brick in a properly operated continuous kiln.

Where down-draft periodic kilns are used, there is an abundance of heat available for drying, if the heat from burning kilns, as well as from the cooling kilns, is utilized. Of course, the products of combustion from the burning kilns are not taken directly into the dryer, but are used in heating up metal radiators under the cars or in heating air in a recuperator. This is a practical system, but the question is whether it is not more economical to use this waste heat from burning kilns in preheating other kilns. This depends upon local conditions.

Enough has been said to show that the problem of economical drying of clay products is a complicated one. Mr. Dunwoody's advice to employ an engineer is to be commended.

MILLION-DOLLAR POTTERY FOR ALLIANCE, OHIO.

LOCATION OF THE NEW plant of the Crescent China Company, just adjacent to Alliance, in Mahoning county, became an assured fact at a meeting of the Chamber of Commerce committee and the second largest producing potters in their own line in the United States—the Sebrings.

Within ten days, actual construction of the most modern pottery in the world is to be started in Smith township, which with its four thriving brick plants and present potteries is destined to become one of the foremost clay producers manufacturing area in the country soon.

Behind this great industry which the Chamber of Commerce has succeeded in bringing to Alliance, are Frank A. and Charles L. Sebring, who are adding their fourth plant to their group, representing 35 years of successful experience in this branch of the clay industry.

The highest grade of semi-porcelain dinnerware that is made will be turned out right here in Alliance in the new plant, which specifications show to be a model of modern pottery construction with seven kilns of the latest continuous type.

Employment of 250 men is expected at the start of the plant and double that many are to be at work within the two-year period of certain growth.

So famous has this dinnerware become, that never has it been possible to produce it in quantities sufficient to supply the domestic demands, much less exporting one carload to foreign markets.

With the coming of this reliable industry, backed by men of reputation in the pottery manufacturing world who are operating capacity plants in Sebring and Salem.

The Sebrings now operate the Sebring Pottery Company and the Limoges China Company at Sebring and Salem Pottery Company at Salem.

The crude magnesite industry in this country is depressed right now because of low consumption in the metal industry. Still the figures in hand indicate that we imported more than half the magnesite used in these industries last year and we would naturally like to see more home industry developed and less importing.

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.



HERE IS AN energetic response to the building movement. Cities in all parts of the State are showing very high totals for the month just past. There still is a large percentage of the amounts showing up as residential work; in some cases, this is as much as 50 per cent. Industrial and public enterprises are beginning to show signs of an increase. This may not be true in all parts. But taking the situation generally, the outlook is very good and prospects are very bright for a busy fall season.

Prices in general remain the same. There may be a fluctuation up or down, but the registered figure is the one that really counts. There have been rumors afloat that might indicate a rise to a level not yet attained, but so far, such rumors have not been substantiated by any marked advance. The price in the northern part of the state stays very close to \$20.00. Quotations might be received a dollar or two one way or the other, but the average will stay close to the given figure. Around Newark this price might show a strong tendency to go to the higher figure, due to causes that are beyond the seller's control. In the southern and south-central parts, the price shows a slight decline as a figure and might reach the lowest quoted in the northern part.

Hollow tile in all parts of the state is at its former levels, with but slight reactions either up or down. A cent or maybe three cents one way or the other makes very little difference in quotations and for purposes of comparison. The higher named figure is a rare case, to be sure, but such ranges have been noticed and so recorded.

Face brick do not change to any great extent. The quoted prices remain much the same as all former markings. The same shades seem to hold the eye; the lights and darks, with the latter to be preferred. Habitational building is making the drain on this class of material, and as long as this class of building is kept going and no reaction occurs, just so long will the demand for this shade be in evidence. Some call is felt for the lighter shades, but in comparison to the darker shades, it is very small.

A blaze, believed to have been started by defective wiring, caused considerable damage to the plant of the Trenton Fire Clay & Porcelain Company recently. The loss sustained was amply covered by insurance.

It is reported that the Old Bridge Enameled Brick & Tile Company has started a plan of insurance among the workers at their plant. The company is to pay the premiums, and the plan will provide a death benefit for the families. The amounts vary, being \$200 for those who have been with the company for at least two years; those in the employ five years are insured for \$500, while those whose service covers a period of ten years or more are insured for \$1,000. Any claims to be paid in these amounts will only be paid after a period of continuous employment by this company. The number of men affected by the new plan is well toward the one hundred and fifty mark.

A new pottery has been added to our now big list. A charter was recently granted to the Acme Pottery Works, Inc., of Newton, N. J. The new company is to deal in pottery. Mr. N. W. Boch, of Rahway, N. J.; Anna H. Kennedy, and Mae K. Hoffman, of Morris Heights, Pa., are at the head of this new organization. The capitalization is \$100,000.00.

BURTON.

MID-SUMMER MEETING OF A. C. S.

MEMBERS OF THE American Ceramic Society and many clay product manufacturers in northern New York and southern Canada are looking forward with keen interest to the mid-summer meeting of the society, Aug. 13 to 19, inclusive, for which the entertainment committee has arranged an elaborate program of plant inspection and sightseeing.

The members and guests will leave Rochester, N. Y., by boat Sunday, August 13th, 10:45 p. m., for a trip across Lake Ontario, pass the Thousand Islands and down the St. Lawrence River to Montreal, at which point they will arrive at 6:45 p. m. Monday. Tuesday will be given over to inspection tours through many plants in and about Montreal of particular interest to the ceramists.

The itinerary for the week includes also trips through plants at Ottawa, Verona, Kingston, Toronto, Hamilton and Niagara Falls.

The itinerary is as follows:

Sunday, August 13th—Leave Rochester, boat, 9:45 p. m.
 Monday, August 14th—Arrive Montreal, 6:45 p. m.
 Tuesday, August 15th—Trips through Montreal Pottery, Trenton Potteries, Dominion Glass Company, McGill University, Consumers Glass Company and plants of National Brick Company, Ltd.; also Thos. Davidson Mfg. Company, Gurney Foundry Company and Canada Cement Company.
 Wednesday, August 16th—Leave Montreal, 8:30 a. m. Arrive Buckingham, 10:20 a. m. Visit Derry Feldspar Quarries. Arrive Ottawa, 5 p. m. Dinner and evening entertainment at "Ye Olde Homestead Inn," Val Tetrau, Quebec.
 Thursday, August 17th—Visit Parliament Buildings, Victoria National Museum, Ceramic Laboratories, paper mills and Merkley's Brick Plant. Leave Ottawa, 10:40 a. m. Arrive Verona, 2:34 p. m. Trip through feldspar quarries and real camp dinner. Leave Verona, 6:35 p. m. Arrive Kingston, 7:35 p. m. Banquet at Kingston Council. Leave Kingston, 10:30 p. m.
 Friday, August 18th—Arrive Toronto, 7:30 a. m. Visits to Standard Sanitary Works, Dominion Glass and Jefferson Glass Companies and several brick and tile plants.
 Saturday, August 19th—Leave Toronto, 9:15 a. m. Arrive Hamilton, 10:15 a. m. Visits to Dominion Glass Company, Canadian Libbey-Owens Sheet Glass Company, General Porcelain Company, National Fireproofing Company and Canadian-Harts Products Company. Leave Hamilton, 2:30 p. m. Arrive Niagara Falls, 4:15 p. m.

At every stop there will be ceramic plants open to the members and guests so this assures the inspection of feldspar mills, enamel, glass, wall and floor tile, brick, hollow ware, electric porcelain and abrasive plants.

At Montreal, Ottawa and Toronto are museums which will be visited if time will allow.

A never to be forgotten joy will be an afternoon in a quarry camp and a camp meal cooked and eaten in the open. This is announced by Mr. R. F. Segsworth, owner of the famous Richardson feldspar mine.

The members of the committee in charge of the trip, who will make the boat, train, automobile and hotel reservations and who should be informed as soon as possible as to the number desiring reservations, are as follows: M. F. Gibson, the Interlocking Tile Company, 32 Toronto street, Toronto, Canada; N. B. Davis, O'Brien and Fowler, Ottawa, Canada; L. H. Cole, Department of Mines, Ottawa, Canada; Howells Frechette, Department of Mines, Ottawa, Canada; G. Percy Cole, Dominion Glass Company, Montreal, P. Q., Canada; H. F. Dingledine, National Fire Proofing Company, Hamilton, Ont.; R. F. Segsworth, Feldspars Ltd., Toronto; Everett Townsend, Frontenac Floor and Wall Tile Company, Kingston; Randal K. Robertson, Cooksville Shale Brick Company, Cooksville, Ont.

The expense of the trip is indeed small considering the

many fine features on the program. The expense is estimated as follows:

	Fare	Lower	Upper	Seat	Total
Rochester to Montreal.	\$11.55	\$2.50			\$14.05
Montreal to Ottawa to Verona to Kingston..	7.80			\$1.30	9.10
Kingston to Toronto...	6.10	2.75			8.85
Toronto to Hamilton to Niagara Falls	2.90			1.20	4.10
					\$36.10

Add to this a daily expense of \$10 for meals and room. Without question this will prove the most enjoyable and valuable midsummer meeting in the history of the society. Many will bring their better four-fifths with them and clayworkers who are not members are extended a cordial invitation to come along and learn what membership in this live organization means to every individual.

IMPORTANT CHANGES AT ILLINOIS CERAMIC SCHOOL.

AFTER SIX YEARS of valuable service rendered as head of the Department of Ceramic Engineering, University of Illinois, Dr. Edward W. Washburn resigned in order to devote more of his attention to a broader field of chemistry which will necessitate his locating permanently in Washing-



C. W. Parmelee, Urbana, Ill.

ton, D. C. He is chairman of the Division of Chemical Technology of the National Research Council and is to take up the work as editor-in-chief of the International Critical Tables of Physical, Chemical and Engineering Constants. Dr. Washburn is one of our most thorough scientists in physical chemistry and has contributed not only scores of valuable papers covering research work in his particular field, but quite a few of real value to the ceramic industry. Dr. Washburn is a graduate of Massachusetts Institute of Technology and holds the degree of doctor of philosophy. He was associated with the department of chemistry at Illinois for eight years previous to taking up the work as active director of the ceramic department upon the resignation of Mr. R. T. Stull, now with the U. S. Bureau of Mines, Columbus, O. During the past year he has had the additional burden of editing the Journal of the American Ceramic Society. Ross C. Purdy is the present editor.

The directing work of the Illinois Ceramic School will be carried on by Prof. C. W. Parmelee, who has been identified with the department for several years past. His well recognized ability assures the school of the continuation of the splendid leadership it has enjoyed during past years.

Prof. Parmelee graduated from Rutgers College in 1896

and was a director of the department of ceramics in that institution for ten years, resigning his position there to become a member of the faculty in the ceramic department of the University of Illinois. He is a past president of the American Ceramic Society and is held in high esteem by that organization and the ceramic industry in general through the lovable nature of the man, and his well grounded knowledge in ceramics expressed in his many valuable contributions to ceramic literature.

Prof. Ralph K. Hursh is the next ranking member on the instruction staff in the ceramic department. A new associate professor will be appointed to complete the staff and fill the vacancy caused by the recent changes there.

BRICKMAKERS OF VIRGINIA AND THE CAROLINAS GUESTS OF J. C. STEELE & SONS, STATES- VILLE, N. C.

TUESDAY, JULY 11, was a red-letter day at Statesville, N. C., and for the J. C. Steele & Sons Co., of that city, for they welcomed within the gates of the best town in North Carolina nearly fifty brick and tile manufacturers, who gathered there for a mid-summer conference. It was a worthwhile occasion for everyone who participated. The talk fests were mostly of the "button-hole" sort, but there were a few formal addresses, including one by H. R. Garden, president of the Virginia-Carolina Brick Manufacturers' Association, Salem, Va. H. W. Conway, of Cleveland, Ohio, and Charles A. Bowen, of Detroit, were present and spoke for the Common Brick Manufacturers' Association. The threatened increase of freight rates in the southeastern district was discussed at much length and a committee appointed to take such action as occasion required.

J. C. Steele & Sons proved generous hosts and entertained the entire delegation at luncheon at the new Hotel Vance, following which the speeches mentioned were made. Speaking of the meeting in general, Mr. J. A. Pugh, Norfolk, Va., secretary of the association, writes:

"Meetings of this character should be more frequent among brick manufacturers everywhere. None are so able nor so wise as to need no help, and few are so dense that they cannot or will not make helpful suggestions. Any one conversant with the facts knows there is no better building material than brick. Brick manufacturers have foolishly competed with each other, seeking to do business solely on a basis of low prices, and in consequence manufacturers of other building materials who have been co-operating, have almost advertised the brick manufacturers off the map. But latterly, brick manufacturers have shown some signs of returning sanity, have met, have co-operated, have advertised, and the prospects are growing brighter. Much remains to be done and it is only through association work this can be accomplished."

The visitors were officially welcomed to Statesville by the Mayor of the city, and all present thoroughly enjoyed both the social and the business incidents of the meeting. The following were among those in attendance:

Those Present.

H. R. Garden, Salem Brick Works, Salem, Va.; F. W. Kling, Adams Bros. & Payne, Roanoke, Va.; R. L. Peerman, Watson Fitzgerald Co., Danville, Va.; R. W. Payne, R. W. Payne & Son, Drakes Branch, Va.; N. C. Redford, Redford Brick Works, Richmond, Va.; Mr. Stumpf, Southside Brick Co., Richmond, Va.; I. H. Farmer, Atlantic Brick Co., Norfolk, Va.; J. A. Pugh, Nansemond Brick Co., Norfolk, Va.; L. W. Doyle, Eureka Brick Co., Norfolk, Va.; L. N. Grant, Grant Brick Works, Weldon, N. C.; S. S. Toler, Nash Brick Co., Rocky Mount, N. C.; Frank B. Daniels, Borden Brick Co., Goldsboro, N. C.; Thos. A. Dewey, Borden Brick Co., Goldsboro, N. C.; J. C. Poe, E. A. Poe Brick Co., Fayetteville, N. C.; Mr. Dowdy, White & Dowdy, Roseboro, N. C.; Geo. M. Nor-

wood, Geo. M. Norwood Brick Co., Raleigh, N. C.; J. F. Johnson, Cherokee Brick Co., Raleigh, N. C.; L. C. Isenour, Isenour & Son, Raleigh, N. C.; Chas. Isenour, G. W. Isenour & Son, Raleigh, N. C.; Chas. Isenour, G. W. Isenour & Son, Salisbury, N. C.; Chas. Isenour, G. W. Isenour & Son, Salisbury, N. C.; C. B. Marcom, Seaboard Shale Brick Co., Charlotte, N. C.; W. R. Teliaferro, Riverside Brick Co., Charlotte, N. C.; H. A. Morson, Carolina Shale Brick Co., Charlotte, N. C.; R. H. Ramsey, Charlotte, N. C.; W. A. Tayloe, Aulander, N. C.; Norman Hildebrand, Brickton, N. C.; Ed. S. Cox, Pee Dee Brick Co., Blue Brick, S. C.; Monroe Layton, Layton Brick Works, Marion, S. C.; Lincoln S. Morrison, Bennettsville Brick Co., Florence, S. C.; Mr. Morrison, Carolina Brick Co., Florence, S. C.; J. W. Brasington, Cheraw Brick Works, Cheraw, S. C.; J. B. Brasington, Cheraw Brick Works, Cheraw, S. C.; M. C. Thomason, Palmetto Brick Co., Cheraw, S. C.; Mr. Anderson, Palmetto Brick Co., Cheraw, S. C.; Howard H. Stafford, Georgia-Carolina Brick Co., Augusta, Ga.; A. H. Merry, Merry Bros., Augusta, Ga.; E. B. Merry, Merry Bros., Augusta, Ga.; H. H. Hinton, Gold Brick Co., Athens, Ga.; Robert T. Wilson, Gold Brick Co., Athens, Ga.; Robert Gamble, Columbus Brick Co., Columbus, Ga.; Mr. Turney, Stockton Gamble Co., Jacksonville, Fla.; E. R. Rankin, Statesville Brick Co., Statesville, N. C.; N. W. Garrison, Statesville Brick Co., Statesville, N. C.; L. T. Holler, Buffalo Clay Co., Buffalo, S. C.; Mr. Williamson, American Truck Body Co., Martinsville, Va.; C. M. Steele, J. C. Steele & Sons, H. O. Steele, J. C. Steele & Sons, A. P. Steele, J. C. Steele & Sons, and F. F. Steele, J. C. Steele & Sons, of Statesville.

MISSOURI BRICK COMPANY SELLING STOCK.

The Festus Pressed Brick Company of Festus, Mo., is still selling stock in its company and at present writing there is about \$12,000 worth of the stock still unsubscribed. The company is capitalized at \$80,000 and because of the bright future before the company it is believed that no trouble will be experienced in disposing of the stock. Under the able management of Frank F. Davis the company is rapidly moving forward to the completion of its demonstration plant and this should be ready for operation within sixty days. B. F. Canavera, inventor of the Canavera system of burning brick, said recently: "The work is progressing very satisfactorily. All the chambers which will contain the green brick, twenty in number, are being laid as rapidly as the bricklayers can do the work. The plant will have a burning capacity of 36,000 bricks a day or a few hundred more than 13,000,000 a year, which, within itself, will create a business of no small proportions."

NEW TEXAS PLANT STARTS UP WITH GOOD PROSPECT.

The first brick were made at the plant of the Model Brick Company, Houston, Tex., last month. Joseph H. Meyer, Jr., vice-president, turned the power into the gigantic machinery; W. T. Carter, secretary and treasurer, shoveled the first clay into the huge "dry pan;" Dave Oliver, general manager of the plant, threw in the throttle and the press began grinding out brick at the rate of 20,000 per nine-hour day. President Fritz Aebi generally supervised the starting of the plant. The Model Brick Company was organized by Fritz Aebi, Joseph H. Meyer, Jr., W. T. Carter and R. C. Harden in February of this year, and the plant was constructed, machinery installed and everything made ready for operation in four months. The company now has orders on its books sufficient to keep the plant running to capacity for three months.

Formula for Success.

Whenever in a fix, sweating will get you farther than swearing. Let mules do the kicking.

Dissolve one problem in equal weight of thought, filter through experience, and crystalize by admixture of sufficient action. Repeat as often as necessary.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Oregon Brick Company Reorganized.

Editor The Clay-Worker:

On account of the death of Otto Hansen, president of the Salem (Ore.) Tile & Mercantile Company, it became necessary to reorganize this company.

At a meeting of the stockholders, held at the office of the company on July 1st, 1922, the following changes were made: It was decided to change the name of the company to Salem Brick and Tile Company, the new company to assume all of the obligations of the old company and to continue the business as of old. A new board of directors was elected, consisting of W. E. Wilson, F. E. Neer and C. E. Albin.

The old company wishes to thank its friends and patrons for their loyal support and co-operation, and to assure you that the new company, through its officers, will do everything within its power to conduct the business along good business lines, and asks of you your continued support.

Sincerely yours,

SALEM TILE & MERCANTILE CO.

Salem, Oregon.

Arkansas News Notes.

Editor Clay-Worker:

Various edifices are being erected over the state in the construction of which large numbers of brick are required. One of the largest jobs is that of the Scottish Rite Cathedral, being erected in Little Rock, at a cost of about \$850,000. Churches, store buildings, schools and other structures are under construction in Texarkana, Hot Springs, Fort Smith and other Arkansas cities. At Pine Bluff construction has started on the St. Joseph's Catholic Church and the First Christian Church and other buildings.

The Arkansas Brick and Tile Company is on the job relative to brick work in various cities. This firm maintains headquarters in Little Rock, but has branches at Pine Bluff, Malvern, Perla—all Arkansas towns. W. W. Dickinson is president of this firm, C. W. Clark vice-president and general manager, M. B. Moore secretary, and Ed Cornish treasurer.

Another live firm is the Fort Smith Brick Company of Little Rock and Fort Smith, Ark.

Arkansas is famed for its Niloak Pottery, located at Benton, from which plant various designs of pottery go out to all parts of the world. A short time ago during a convention of the Y. W. C. A. at Hot Springs, international delegates took home samples of the articles turned out by the Niloak Pottery.

Business men of Whitener, near Huntsville, Ark., are planning to erect a white lime kiln at that place for the purpose of supplying orchards in that section with lime.

The Charles Schmidt Brick Company, Pocahontas, Ark., is now enabling customers to get the best of hard face brick at a home plant. The firm is now burning a special bungalow brick, of a real dark gray color with red flashes. This grade of brick is burnt in 25 or 30 different shades. The firm also makes a No. 1 red face brick and a No. 2 building brick.

John Dowdy has had the contract for doing the brick work on the Baptist College, being erected at Jonesboro, Ark.

Garland Brewster, manager of the Pine Bluff (Ark.) Brick Company, is keeping busy these days.

Clay from Arkansas has been hauled more than 100 miles to form the roadbed for the Illinois Central Railroad near Clarksdale, Miss. More than 125,000 yards of Arkansas hill clay was to be used in the construction of the new roadbed, and the cost of the work will exceed \$300,000, it is reported. When it was found that the sandy loam of the Mississippi delta country would not support the roadbed, it was decided to bring the earth from the west side of the Mississippi river, over the Harahan bridge across the stream and through Memphis.

ARKANSAS TRAVELER.

Comparatives Prices of Brick and Supplies in England.

Dear Mr. Randall—Many thanks for your wishes. I am glad to say that I and mine are quite well, and hope it is the same with you.

Lancashire represents probably the most important brick-making center in England, and of that Manchester will come first.

Our price today is 63 shillings per thousand, delivered on site, and the area in which this price is in force covers a radius in places of four and five miles from the works. I should say that was equal to \$14 a thousand.

For a basis of calculation, a dollar this morning is 4s 5d. Coal for burning Hoffman kilns can be bought at 12s 6d to 13s (equals \$3 per ton). Wages today are 1s 4d per hour, which works out at \$2.65 per day, and it takes 3 to 4 cwt. of coal to burn 1,000 bricks.

There are considerable reductions in many articles we purchase, such as timber, iron, oils, etc. But, on the other hand, rates and taxes are very heavy. So is insurance, and for national health and workmen's unemployment alone we pay 1s 3d per week for every man we employ.

Many people are apt to think that because coal and wages are down, bricks ought to be considerably reduced, and forget altogether that some things are up four and five times, and are still up. With very kind regards.

Sincerely yours,

SIDNEY HIGGINS.

Manchester, England.

Building Situation in Cincinnati Improving.

Editor The Clay-Worker:

In the building line in Cincinnati there is said to be an improvement of from 30 to 40 per cent over last year. During the first five months, an increase of more than \$3,000,000 in cost of improvements for which permits have been granted is shown as compared with the same period last year. The only unfavorable feature in this increase is the threatened shortage of skilled labor.

Among the notable projects in prospect is an apartment hotel, twelve stories high, to be constructed of brick and concrete, to contain approximately 150 apartments, with a roof garden and other modern facilities. The estimated cost will be \$1,500,000.00 and it is being financed by the Vernon Manor Company, a recently organized corporation. Mr. Melville Ritchie, president of the American Mortgage Company, has been elected president of the company.

More than a hundred homes will be built on fifteen acres of ground recently acquired by F. J. Lodder, mushroom grower, on Edwards and Edmonson Roads, Hyde Park. It will be necessary to build two new streets through the tract. Only brick dwellings will be permitted, to cost no less than \$7,500 apiece. No lot will have less than 40 feet frontage.

and a depth of 140 feet. A small park will be created in the vicinity in order to add to the attractiveness of the development. There will be 114 building sites in all.

The creating of an associate membership to consist of architects, builders, and other allied industries, was discussed at the monthly meeting of the Building Owners and Managers' Association last week. A committee was appointed by W. M. McIntyre, president of the organization, to ascertain the advantages and possibilities of such a membership.

CINCY.

WILL BRICKLAYERS SPEED UP THEIR WORK?

THE BUSY BUILDING season develops a shortage of labor in general, and bricklayers in particular, throughout the land. As a result, many who would like to build homes of brick are compelled to build frame structures. It was anticipated the introduction of the Mann trowel might help relieve this uncomfortable situation by enabling bricklayers to speed up their work, but it seems they are not so inclined. On the contrary, they turn a deaf ear to any and all suggestions to that end. Strange to say, they find comfort and encouragement in their obstinate disregard for the welfare of the brick industry from unexpected sources.

Following the introduction of the trowel at the last annual convention of the National Brick Manufacturers' Association, Mr. Ralph Stoddard, secretary of the Common Brick Manufacturers' Association, made mention of the trowel, but without any reference to it having been introduced at the N. B. M. A., leaving the inference that he was promoting the trowel. As a result the editor of the Journal of the Bricklayers, Masons and Plasterers' organization, took him to task, declaring the trowel was not a tool acceptable to the members of the Bricklayers' Union. This was not an unexpected development. Now Mr. Stoddard in a communication to the Journal denies any part in the introduction of the Mann trowel and closes his communication to the Journal with this astounding statement:

"I think the widest publicity should be given to the fact that the Mann trowel is a failure, because many people might be deceived by the attempt that the inventor and those interested in him are making to promote it."

It is apparent that the "wish is father to the thought," for it is quite clear the statement is based solely on hearsay knowledge. There are two sides to every story and the following reply which was given to the editor of the Journal, gives in brief the other side of the story. As stated in same, the Mann trowel is not a failure, except as it is made so by the refusal of bricklayers to use an improved tool, from mere prejudice. We believe ultimately it will come into general use, as a means of expediting brick construction, and in a measure relieving the craft from the shortage of bricklayers.

A Little More About the Mann Trowel.

Editor The Bricklayer, Mason and Plasterer:

Under the above caption on page 124 of your June issue is a statement with which I wish to take issue, for I think it is unfair and misleading. I refer to the communication by Mr. Stoddard who, as I see it, is talking about something of which he knows little or nothing. To use a slang phrase, he is "talking through his hat" when he says as he does that the Mann trowel is a failure. There is an old saying that truth is mighty and must prevail. I am quite sure that will prove the case in this instance, and in time the Mann trowel will come into general use. I do not mean by this that it will supplant the old trowel. Nothing could be better than

that for fine brick work. But for common ordinary wall construction the two trowels can be used with decided economy.

I think some of your readers may be under a misapprehension in this connection, so permit me to set them right, and suggest if the skilled bricklayer, while using the old trowel for pointing up and giving the final touches to the face of the wall, just as has been done for ages, will let the helper use the Mann trowel for spreading the mortar, it will speed up the work and the amount of brick laid per day will be increased, thus lowering the cost of brick construction; certainly a very desirable achievement which will prove helpful to the bricklayer, the brick manufacturer and the ultimate consumer. As the latter pays the bills, he is entitled to some consideration.

If the skilled bricklayers will accept the Mann trowel in the manner suggested, as an aid to quicker and cheaper building, he will find it advantageous and helpful, for he will be relieved of a part of the laborious work which is delegated to the helper. Let reason prevail, let the Mann trowel be used in work for which it is adapted and the craft will profit thereby. We are creatures of habit, the average workman is slow to adopt new methods and implements, but when he has become familiar with them he as a rule finds himself the beneficiary, his labor is lightened and his own usefulness increased. Such I hope will prove to be true in the use of the Mann trowel.

Respectfully,

THEODORE A. RANDALL.

An illuminating example of the present day situation in building is offered by one of the leading Hoosier brick manufacturers, who just now has more orders for brick than he can supply. His firm is also interested in construction work, including a large school job, to be built entirely of brick. Finding he could not get enough bricklayers to carry on the work satisfactorily, the brick man went to the representative of the local Bricklayers' Union, and after explaining the situation, asked if he could not supply him with more bricklayers so they could get started on the job. After due deliberation the business manager of the union, said, "Oh, put in the foundation in concrete." That is not the spirit that helps build and maintain an industry.

GOES ABROAD TO STUDY TUNNEL KILNS.

THE WELL-KNOWN ceramic engineer, Carl B. Harrop of Columbus, Ohio, recently departed for Europe, where he will investigate and make a study of tunnel kilns as operated over there. It is a big, important subject but one which Mr. Harrop is peculiarly qualified to analyze. He will visit England, France and Germany and will undoubtedly have an interesting story to tell on his return home. Mr. Harrop has designed and constructed a number of tunnel kilns for various ceramic plants in this country. He recently booked an order for a tunnel kiln for the Kalamazoo Sanitary Mfg. Co., where two Zwermann tunnel kilns have been in operation for some years past. During his absence his associate, Frank M. Hartford, will be in charge of the business. Readers of The Clay-Worker desiring information in regard to Harrop kilns or other ceramic problems can obtain same promptly without awaiting the return of Mr. Harrop. Their office address is 66 S. Third St., Columbus, Ohio.

The editorial opinion of the country is almost unanimous that the decision of the Supreme Court that labor unions are liable and subject to the anti-trust laws is eminently fair. And it ought to help pave the way to the end of the strike.

THE PURIFICATION OF CLAYS.

THE ISSUANCE of Technical Paper 281, "The Use of Electrolytes in the Purification and Preparation of Clays," by H. G. Schurecht, ceramic chemist, is announced by the United States Bureau of Mines.

As clays are of secondary origin, being derived from the decomposition and disintegration of the primary rocks, they differ in both physical and chemical constitution, depending upon the character of the original rocks and the conditions of decomposition, says the author. Clays are not definite minerals, but they are made up largely of mineral fragments ranging in size from comparatively coarse grains to colloidal particles so fine that they can exhibit Brownian movements.

Clays can be obtained so finely divided that they can make true colloidal solutions. Colloidal clay belongs to the class known as "suspensoids" and is reversible—that is, the particles can be dispersed in water or thrown out of colloidal solution by means of suitable electrolytes. The action of electrolytes has been an extremely valuable aid both in the purification of clay and in the casting of clay wares. New applications are continually being discovered.

Because of changed conditions, due chiefly to the World War, many manufacturers in this country have had to rely on domestic clays to take the place of those previously imported. Many domestic clays that are too impure to be used in the crude state can be utilized after purification. In order to improve the quality and uniformity of the product and to increase the output in purifying clays, it is necessary to maintain minimum viscosity in the clay slip during certain stages of the treatment. This minimum is governed by the quantity of alkalies added to the slip.

The correct addition of alkalies to the casting slip is essential in the casting of clay wares. Heavy wares are not cast as extensively in this country as in Europe. For instance, the casting of glass pots and other refractories is being carried on with success in many places in Europe, but it is practiced only to a limited extent in this country.

One of the sources of loss in the manufacture of clay products, especially heavy wares such as chemical stoneware and glass pots, by the plastic and casting processes is lack of strength of clays in the dry state and at the firing temperature. Strength enough to resist the shocks and strains of handling in the green or dry state is necessary. At certain periods during the burning in the kiln the ware loses strength and is liable to warp, crack or break, causing heavy losses. The natural remedy would be to improve the strength of the clay body by artificial means or to introduce stronger clays.

In preliminary work by the Bureau of Mines it was found that a surprising increase in strength was gained by adding alkalies to clay in the plastic state. In some instances the strength of the treated clays was four times as great as that of the untreated. Part of the investigation was limited to a study of the effects of different additions of alkalies and acids on the properties of clays with special reference to their influence on the strength.

Many clays, which otherwise possess good properties, lack in plasticity and strength, and their use therefore is limited. In certain localities plastic clays of the fire-clay type are comparatively scarce, whereas the nonplastic fire clays are abundant. Part of the purpose of this work was to determine how much the plasticity and strength of nonplastic clays could be increased by special treatment, such as wet grinding, adding electrolytes, removing the coarse material by screening, and adding an organic binder, such as dextrine.

Copies of Technical Paper 281 may be obtained from the Bureau of Mines, Washington, D. C.

OF INTEREST TO CLAYWORKERS.

The Monumental Clay Products Company of 917 Munsey Building, Baltimore, has been incorporated with a capital stock of \$50,000 and with George Haines, Joseph J. Flynn and Edwin W. Hermann as the incorporators.

Frederick W. Donahoe, secretary of The Refractories Manufacturers' Association, has been made an Active Member of the American Ceramic Society, the Board of Trustees having advanced him from Associate to Active Membership at a meeting held early in May.

John D. Ramsay, president of the Elk Fire Brick Company of St. Marys, Pa., and past president of The Refractories Manufacturers' Association, led in the discussion of a paper on the function of governing boards of trade associations at the meeting held recently by the National Association of Manufacturers at the Waldorf-Astoria.

The Bureau of Foreign and Domestic Commerce has issued a questionnaire to more than a thousand consuls and commercial attaches in practically all parts of the world in an endeavor to secure information relative to possible foreign markets for American refractories. A committee connected with The Refractories Manufacturers' Association collaborated with the Government in the preparation of the questionnaire.

Work is progressing at the Bureau of Standards, Washington, D. C., on standard specifications for Government purchasers of refractories. A committee, of which Dr. Raymond M. Howe of the Mellon Institute is chairman, has been appointed by The Refractories Manufacturers' Association to represent the producers in the conferences which are being held at the Bureau.

THE BOOK OF SMILES.

THE JUNE ISSUE of the Book of Smiles has as its feature squib a toast—"Here's to the ladies, God dress 'em—we can't." It is followed by this timely hit on disarmament—"Even if the nations do agree to disarm, some crafty statesman will slip a proviso in permitting the building of battleships for medicinal purposes." The issue is brim full of clever prose and rhyme. Among the latter is—

"Owed to a Restaurant.

'Twas in a restaurant they met,

One Romeo, one Juliet.

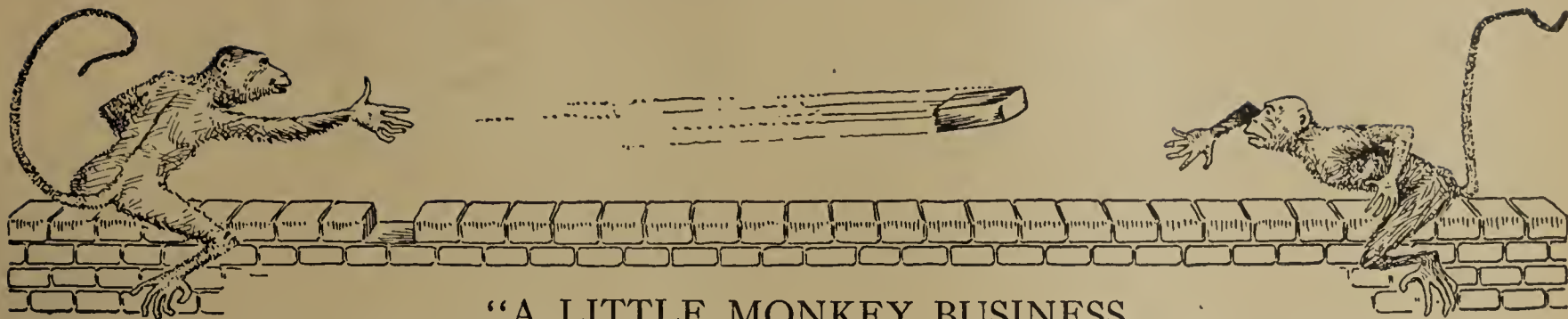
'Twas there he first fell into debt,

For Rome-od what Juli-et."

Then follows the usual instructive data relative to the Standard Dry Kiln which brickmakers throughout the country acclaim a most efficient and money saving system of drying brick. Write for a copy and note particularly the letter of the Arkansas Brick and Tile Co., on pages 6 and 7. Address Standard Dry Kiln Co., 1547 McCarthy St., Indianapolis, Ind.

EXPLOITING THE DEALER.

THE LACLEDE-CHRISTY COMPANY has inserted in its regular bulletin going into Indiana a slip containing the names of dealers in Indiana who are authorized distributors for Laclede fire brick in various grades and shapes. This is a splendid idea that other clay products people may follow to advantage. Exploiting the retail dealer not only helps to get business but it helps keep the dealer interested, too, and encourages that kind of team work which makes for bigger things in a business way.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

A LITTLE NONSENSE.

History or Chemistry.

Teacher: Who was the conqueror of Greece?

Bright Pupil: Dutch Cleanser.

Laboratory.

Professor Peet (hearing a sudden noise): Borman, what dropped there?

Borman: The temperature, sir.

The Reappearance of Mary.

Mary got a little skirt,
The way that others wore 'em;
It was as long as any skirt—
It went from top to bottom:

Mary got a little skirt,
The latest style, no doubt;
Every time she got inside,
She was more than half way out.

SUPERLATIVE.

Teacher: Johnny, how much is 3×3 ?

Johnny: 3×3 is 9.

Teacher: Pretty good, Johnny.

Johnny: Pretty good! Hell! that's perfect!

—O. O. McIntyre.

UP ON BIBLICAL LORE.

In Louisiana during the grinding season the negro children eat sugar cane in abundance. One day an old negro was heard reprimanding a negro boy whom he saw eating cane after cane.

"Boy," he said, "ain't I done tole you not to eat so much cane? Don't you know cane killed Abel?"—Judge.

VOTING UNDER A MISAPPREHENSION.

A corrupt voter was arrested once in Wama.

"What am I arrested for?" he asked.

"You are charged," said the officer, "with having voted eight times."

"Charged, hey," muttered the prisoner. "That's queer. I expected to be paid for it."

ONCE TOO OTEN.

A gentleman in Cincinnati employs two negroes to work on his rather extensive gardens, which he personally oversees. One morning Sam did not appear.

"Where is Sam, George?" he asked.

"In de hospital, sah."

"In the hospital? Why, how in the world did that happen?"

"Well, Sam he been a tellin' me ev'ry mor'nin' for ten years he gwine to lick his wife 'cause o' her naggin'."

"Well?"

"Well, yestiddy she done ovahheah him. Da's all."

EVIDENTLY KNEW.

Professor (in engineering class): What is a dry dock?

Student (in rear): A physician who won't give out prescriptions.—Collegian.

THERE'S A REASON.

Husband: I know a man who has been married thirty years and he spends every evening at home.

Wife: That's something like love.

Husband: No, it isn't. It's paralysis.

SOME DOUBT.

As Dad escorted little John through the zoo they came upon a rabbit with two little bunnies grazing near.

"Look," said Dad, "what the stork brought the mother rabbit."

Later they paused before the elephant's enclosure. Beside the mother elephant stood her latest offspring.

"Oh!" said Johnnie, "did the stork bring this one, too?"

"Er—ah—no!" said Dad, haltingly, "it must have been a crane."

PREPAREDNESS.

In one of the Southern States the negroes are great patrons of a matrimonial agency. One ducky, anxious to find a wife for his son, went to this agent, who handed him a list of lady clients. Running through this the man came upon his own wife's name, entered as desirous of obtaining a husband between the ages of twenty-eight and thirty.

Forgetting about his son, the ducky hurried home to announce his discovery to his wife. She was not at all disturbed.

"Yes," she said. "I done give him my name. I puts it down when you was so sick in de winter and de doctor he says we must prepare for de worst."

SUCH NICE CUSTOMERS.

George Cohan still enjoys himself telling stories about his race. His latest, called "Hebrewflage," is about a small Hebrew storekeeper down in New York who, much to the surprise of his brethren, blossomed forth one morning with a gorgeous new blind on his store window. Of course it was the envy of all the tribe. Also the cause of many questions. "Nice blind, Isaac," began one of his neighbors. "Yes, Aaron." "Vat did it cost you, Isaac?" "It didn't cost me nothing, Aaron; my customers paid for it." "Your customers, vy Isaac!" "Sure, Aaron. I put a leedle box on my counter marked 'For the Blind' and they paid for it."

Written for THE CLAY-WORKER.

PACIFIC COAST NEWS.



CENTRAL CALIFORNIA and especially the vicinity of San Francisco, is still suffering seriously from the shortage of bricklayers. Manufacturers of the various clay building products are suffering a period of enforced light business for this reason. Until this condition is remedied, it will be impossible for the clay industry to expand in this locality as the business and building warrant. Brick and tile are the logical building materials for the California residence and business block. The shortage of brick masons and the lack of education in the merits of these products is resulting in the extensive use of wood and of stucco. The brick masons' school that is being conducted in Oakland is getting very good results and when the course is completed there will be a considerable increase in the number of brick masons available. With the shortage of brick masons relieved, it will depend upon the efforts of the brick producers whether the actual demand for bricks is increased. At present the demand is greater than the supply. Judicious advertising and education should improve the demand and allow expansion such as is taking place all over the Pacific coast.

The building boom that has been going on in Oakland, California, is gaining larger proportions every week. The third week in June the building permits taken out came to over \$1,500,000, and the last week of the same month they exceeded \$2,000,000. This is a big amount of construction for a city of less than 300,000 and when it is considered that intensive construction has been going on for over six months with much more "in the air," it looks as if clay manufacturers will get a good bit of business from there when the shortage of workers is relieved.

With four kilns now operating all the time, the California Pottery Company at Merced is unable to catch up with orders. \$80,000 of the treasury stock of the company is being placed on the market to finance the plans for expansion which will make this plant the largest on the Pacific coast. Among the new additions to the works is to be a big plant for the manufacture of common brick, and seven new dryer tunnels which are now under way. Machinery for the manufacture of tile and pipe is on the ground and is partially installed. Two hundred cars for the transport of the present products from the molding room to the kilns are on the road.

The United Refractories brick plant in San Louis Obispo county is to be reopened soon on a larger scale than before. The plant, it is said, will be under the management of a new company.

The Napa Valley Mining Company is understood to be planning to operate the new field of porcelain clay discovered near Calistoga, California.

A new clay bank has been opened near Porterville, California, by George A. Clarke. The output is being shipped to Craycroft & McKnight of Fresno, tile and brick manufacturers.

The Stieger-Vallejo Clay Products Company, Vallejo, California, has successfully completed its stock subscription campaign and the plant of this company is being renovated for the purpose of beginning operations again.

The increase in building and in the use of brick for building purposes in the Los Angeles district has resulted in a tremendous increase in the amount of brick produced. \$49,000,000 worth of building has taken place in Los Angeles during the first five months of 1922 and in the middle of June it was announced that the brick production of the Los Angeles district was 1,000,000 brick a day, and that within

thirty days production would reach the total of 1,200,000 brick a day. Of this amount, 550,000 are being supplied by the Simons Brick Company, one of the largest concerns in the West, operating five plants.

The situation in the face brick, terra cotta and building tile field has been met by the expansion of the Los Angeles Pressed Brick Company so that this company is not only able to meet all local demands but is making considerable shipments of fancy products to outside points. It is of interest to note that the Simons Brick Company is operating at Simons, California, one of the largest brick plants in the United States. The plant has a 150 acre site, and produces 435,000 brick a day.

The Tropico Potteries, Inc., located at Tropico, near Los Angeles, California, has increased the output of its various departments from 25 to 100 per cent by the introduction of new and improved methods and by the addition of more machinery. The plant has been completely electrified recently and a system of humidity drying installed that dries terra cotta shapes for the kilns in twenty-four hours. Four new sewer-pipe kilns, two of which are already completed, will increase the capacity of this department 100 tons a month. Orders in this department are from four to six months ahead of the former capacity. The production of tiles, terra cotta and sewer pipe has already passed the 750,000 mark, and by the end of this year, or at the latest, next year, the production is expected to reach the million mark.

The Brick Manufacturers' Association of Los Angeles has notified the Board of Public Works that 10,000 brick a day can be delivered to the Second Street tunnel, and added that if necessary, the number could be increased to 20,000 brick a day. This information caused the board to refuse an extension of time to the contractor, who claimed that a shortage of brick would prevent him from finishing the contract on the agreed time.

Changes in the building ordinances of Los Angeles permit the use of the 8-inch wall in buildings with a floor area of less than 400 square feet. Jobs of less than \$75, which heretofore did not require a permit, must now have permits. The construction of false or ornamental chimneys and fireplaces is subjected to strict regulation to insure against their being used for any purpose.

The City Council at Long Beach, California, has changed the building regulations permitting building on 75 and 90 per cent of the lot area. Twelve and eight-story height limits were adopted through various sections of the downtown business district.

The Vitriified Products Company is building a strictly modern brick and clay plant at Old San Diego, near San Diego, California. The plant will embody all the latest mechanical methods of handling.

A brick manufacturing plant at Mead, Washington, has been purchased by the Western Materials Company and will be used in manufacturing magnesite stucco. The material will be sold under the name of "Feltstone."

The Warrentown Pottery plant, near Astoria, Oregon, is expanding steadily, but despite this fact, the company is still filling orders that were to have been filled in January. The concern thus far does no business outside the State of Oregon.

The Advertising Club of Spokane has taken steps to secure the development of the big clay deposits near that city. Both ample materials and abundant power are available for this enterprise.

The Acme Brick & Tile Company, Box 1436, Manila, P. I., desires to get in touch with fire-brick and fire clay producers who wish to enter that field.

SUNSET.

A man who is given a goodly measure of authority should really grow bigger as a result, and not merely swell up and get chesty.

OBITUARY.

THE PASSING OF CHAS. J. DECKMAN.

IN THE DEATH OF CHAS. J. DECKMAN which occurred at his home in Cleveland, Ohio, June 27th, Cleveland loses one of its foremost citizens. "Charlie" was a robust character, keen minded with a broad view of all the affairs of life, he was a safe and sane leader in whatever activity he became interested. One of the pioneers in the paving brick industry, he for many years was the leader in the craft and for several years served as president of the National Paving Brick Manufacturers' Association. In 1916 he was elected president of the National Brick Manufacturers' Association and continued a valued counselor as a member of the executive committee in the years that followed. He was very patriotic, a great lover of Old Glory, and one of his fads for



The Late Charles J. Deckman.

a number of years was to present a silk flag to the various camps of the Sons of Veterans and the Knights of Pythias which in the previous year had made the largest gains in membership. He was an ardent member of the Sons of Veterans, was elected Division Commander for Ohio in 1890. He was also one of the leading officials of the order of the Knights of Pythias, was a Past Chancellor of that organization. Owing to ill health he retired from active connection with the paving brick industry some years since, but continued in an advisory character as one of the leading spirits of the paving brick industry to which he had devoted a large part of his business life. He is survived by his widow and one son, Charles, Jr.

A toast which Mr. Deckman offered at the New Orleans N. B. M. A. Convention and which was one of his favorite poems, is a very fitting valedictory, or final farewell, from

one whose memory will always be cherished by his friends and associates.

Could I pour the nectar the gods only can
I would fill my cup to the brim;
I would drink to the health of the clayworking man
And the plants represented by him.
I would drink to his sweetheart who bade him goodbye
In a manner that filled him with bliss,
As he thinks of the tear that rolled down her cheek
And salted the sweet of his kiss.
I would drink to the wife, who with babe on her knee
Awaits his coming in vain,
She reads his brief letters so tremblingly,
She reads them again and again;
I would drink to the health of the old mother who sits
By the fireside and murmurs and murmurs
And weeps o'er the stocking she knits,
As she thinks of the absent one.
But when life's journey is o'er
And he has made the last brick that he can
May mine Host at the Inn at the end of the road
Welcome the clayworking man.

LOUISVILLE BRICK MAN DIES.

Karl B. Grahm, founder and principal owner of the Louisville Fire Brick Works, the most important refractory clay products concern south of the Ohio river, died at his home at the age of 77, July 8, from hardening of the arteries.

Mr. Grahm was born in Hanover, Germany, October 14, 1845, and was the son of a high German official. He came to the United States in 1865, working at first as clerk for a coal mining concern in Pennsylvania. Later he moved to eastern Kentucky and was interested in some land and timber enterprises and finally became interested in developing fire clay products in that part of the country.

In 1887 he came to Louisville and founded the Louisville Fire Brick Works, having previously operated fire clay mines at Grahm, Kentucky. His works here have grown and prospered from the start and he accumulated considerable wealth while building up the biggest fire brick plant in the South.

Mr. Grahm was a very devout member of the Baptist Church, and the funeral services were conducted at 2:30, July 10, at the Fourth Avenue Baptist Church, Fourth and Oak streets, Louisville.

Mr. Grahm is survived by his widow, to whom he was married in 1920; a daughter, Mrs. Frank A. Ropke, and two step-daughters.

DEATH CLAIMS BUCYRUS BRICK MAN.

Charles Breisinger, for nearly half a century prominent in the brick manufacturing industry of Bucyrus, Ohio, died at his home in that city June 22, following a prolonged illness. Mr. Breisinger, who was 69 years old, was born in Germany, but had lived in this country since he was 17 years old. He was formerly associated with John Witwer, but in 1905 he organized the Breisinger Brick & Tile Works, of which he was manager until two years ago, when ill health made it necessary for him to retire from business. A widow, one son and two daughters survive.

There are two good ways to keep informed on what is doing in the trade and what progress is being made. One is to read the trade papers, including both the text matter and the advertising pages. The other is to find time for salesmen who come your way with new offerings.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.
THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 78. July, 1922. No. 1.

CURRENT COMMENT.

It's dog days and vacation time.

* * *

Vacations make most of us glad twice—glad to go and glad to get back.

* * *

The main reason why the public is suspicious of the coal industry is the price it has to pay for coal.

* * *

The brick plant which is not a busy place these days is out of tune somewhere because most all are very busy.

* * *

Structural lumber has been climbing skyward again, which makes more opportunities for brick and hollow building tile.

* * *

The fact that there are more savings deposits in our banks right now than a year ago is one of the good signs of the times.

* * *

If only 5 per cent of people think, 10 per cent think they think and the other 85 per cent don't want to think, then what is there to do about it?

* * *

Clay products ought to gain some ground in home building this year that will be a stepping stone to more of the same kind of ground next year and for several years to come.

* * *

The little reduction in freight rates helps some, but we are still confronted with the fact that the cost of handling and distribution is too high in comparison with the cost of production, and the industry should center some of its thoughts and efforts on ways and means to lessen the cost of handling and distribution of clay products.

A man is seldom really down till he gets to feeling down in the mouth.

* * *

The real test of courtesy in a man is when he faces the lack of it in others.

* * *

It is seldom that a man can really profit himself by doing harm to another, so why do it?

* * *

Eventually we will have to put some sort of a legal ban on strikes, and we might as well get at it now.

* * *

The abundant fruit crop gives promise of putting better things in the cellar for next winter than home-made hooch.

* * *

Our dry laws will probably help make Canada a stronger favorite as a fishing ground for summer vacationists this year.

* * *

This eight-hour day thing has created a question of how to spend our leisure time that we may be happier and better as well as get more out of life.

* * *

This is the season in which college graduates are reminded that a college education may fit them for a good position, but it does not give them a title to one.

* * *

Recent advances in the price of lumber make for better opportunities to sell brick and hollow building tile and to encourage the building of better and more permanent homes.

* * *

A wage reduction is a painful operation, and so is dividend passing, but most all of us have to take our bit of this now and then, and in the way we take them is where real character crops out.

* * *

We are now told that farming is no longer a matter of pioneering, but of scientific training, and we rise to remark that part of that training should include an understanding of the benefits of tile drainage.

* * *

There are a lot of people ready to furnish good counsel and advice to salesmen, but in the end it is hard work, intelligently guided, that counts, and there's no easy way to dodge the work and still make a pronounced success of it.

CHURCHES IN THE SOUTH.

Building returns and special reports indicate a sort of church building boom in the South country, where a summary of church building during the past seven or eight months indicates a total of projects in the southern states alone that will run over twenty-five million dollars. Some of the buildings are very pretentious and will run close to a million dollars in cost, while others are more modest. The figures are presumed to cover all costing ten thousand and up. Next to home building, therefore, church building is the strong feature of the year, especially in the South country.

ENGLAND AND OUR ARCHITECTURE.

It is refreshing to note that an exhibition of American architects in Manchester, England, has brought favorable comment and is opening the eyes of the Old World to the fact that we not only have the most modern buildings in the world but we have developed some of the real architecture of the world. It is true that we got most of our

architectural inspiration primarily from the older countries, but the improved product of modern architectural vision which is developed in America is worthy of the recognition which it is getting abroad, and this recognition should encourage our home architects as well as increase the public respect for what they have been giving us in the way of civic art.

GARAGE BUILDING.

Not only has this been a great year so far in the building of garages, but the indications are that there will be more built before the year is over. Are the brick men and the hollow building tile men getting as much of this business as they should? From what we can see it doesn't seem so. There are too many metal and wooden garages. A little more active exploiting of brick and hollow tile should result in more trade here and in the building of better and more satisfactory garages.

EDITORIAL APPROVAL.

The National Paving Brick Manufacturers' Association, with headquarters in the Engineers' Building, Cleveland, furnishes a splendid example of getting editorial approval in their Bulletin report of the local papers at Williamsport, Pa., which, though commonly divided on most questions of the day, are unanimous in their approval of vitrified paving brick for street and road work. There is more than a hint in this to clayworkers everywhere to keep local editors informed of the quality and merits of their products so that they may have the benefit of editorial approval, which is a mighty good thing to help boost a product along.

FARM OUTBUILDINGS.

In the late summer and fall is when the farmers turn their attention to outbuildings. This is a time that the local retail dealer in building material expects to do big business with the farm trade in barn buildings, shed material and other material for hog and poultry houses. In the past, most of this material has been lumber, but in the future it should be brick and hollow building tile, and this year furnishes a mighty good opportunity for the clayworking industry to push its products for use in farm outbuildings. Some are already busy at it, especially in the pushing of hollow tile in the Iowa territory, and there should be more of it everywhere, more pushing of hollow tile and of brick for every kind of outbuilding on the farm from hog houses on up to implement houses and barns. It costs so much to build good frame buildings now that it should be easy to persuade the farmers to invest just a little bit more and get permanent structures with the best material on earth, good burned clay products. Are you getting ready with literature and advertising to go after this opportunity and push your products among the farmers of the country? If not, it is time to get busy, because there is business to be had this year which, if handled right, will lead to still more business next year.

ADVERTISING TO ARCHITECTS.

There is a movement in action now for better advertising to architects which should result in material good and should have the support and co-operation of the clayworking industry.

Incidentally the work of standardization and simplification and the eliminating of useless sizes and patterns will help out wonderfully in this and will reduce the volume of printed matter necessary to properly lay the details of architectural clay products before the architects. This good work should

be hastened to its logical end and then proper effort should be made to conform with the requirements for better and more clear-cut advertising to architects.

There are two general classifications given to advertising for architects. One is informational, and the other is promotional. The first furnishes technical information, while the other is calculated to stimulate special interest in the thing advertised.

There is involved the matter of standard or uniform sizes for circular matter and catalogs which should be complied with, and then those with clay products to exploit to architects should seek to put data pertaining to them in definite form, condensed and informative and convenient for ready reference.

STRIKE TOLL.

Not only do strikes followed by violence take toll of human life and result in shameful blots on our boasted civilization, but the toll even in dollars and cents is staggering when we count it up and confront the aggregate.

Recently, William H. Barr, president of the National Founders' Association, compiled some figures which show an average of 3,300 strikes a year in the United States for the past six years. This makes a total of 20,062 recorded strikes between January, 1916, and December, 1921. Then he says if the money which was lost to the workers and the industry at that time was available, what a balance it would make in the savings banks of the country.

When you measure the toll of strikes in terms of money and business loss and its effect on prosperity, it is appalling, and we should find in the contemplation of figures of this kind an impressive argument in favor of laws against strikes and the providing of equitable courts of arbitration.

BRICK AND THE LINCOLN HIGHWAY.

One of the good things about the progress reported on the Lincoln highway is in that gradually the mileage of natural earth roadway diminishes and has been replaced with more substantial types of construction in which brick is getting some showing though not as much as we would like to see. The tabulated figures for February, 1922, show that of 3,305 miles of roadway, 241.03 is brick paved, compared with 521.75 of concrete and a somewhat greater amount of macadam. We feel thankful for what brick progress has been made and are hopeful that there will be much more of it in the future, both on the Lincoln highway and other important roadways.

KEEP THE PUBLIC INFORMED.

Director George Otis Smith of the U. S. Geological Survey has said several level-headed things about the coal industry during the strike period, and one of these things is that the coal operators have shown a short-sighted policy of opposition to public inquiry into the real facts of the industry. He says the public is suspicious about everything relating to the coal business and the more grudgingly the facts are made known, the more suspicious the public becomes. He says it is true that the coal industry with its experience can best be its own physician, but he warns that the public is becoming impatient for results and it measures results by the price of coal. Also, when it wants to know facts, these facts should be forthcoming. This is not only true of the coal business, but of every business with which the public is concerned. Where there is trouble, the public wants to know the insides of it. Moreover, wise business men have learned that taking the public into their confidence

is better than trying to intimate that the details of their business is none of the public's affair. The packers and harvester people, the oil people, and others, have seen the light, and prominent advertisers everywhere are not only recognizing the necessity of keeping the public informed, but they are also realizing that facts about the details of business constitute good advertising matter. In this respect the clayworking industry has always been wide open and on the right track. It has no secrets and invites the public to view its work in detail as well as the final results. This policy, too, will be useful in promoting a wider use of clay products.

A NEW BROWN CATALOGUE.

The Brown Instrument Company of Philadelphia, Pa., announce the publication of a new resistance thermometer catalogue which explains the theory of resistance thermometry, the various types of instruments which are made, and the merits of each type, suggesting the really wonderful field which this instrument so ideally covers.

Operating as it does upon the basis of electrical resistance, rather than pressure, it does away with many of the handicaps of the pressure type thermometer. It has also in its favor very great accuracy and extremely rapid speed of action. For installation where extreme accuracy is required within a very small range of temperature, it is by far the most ideal instrument yet produced.

The Brown Instrument Company will gladly send this catalogue to any executive requesting same on the regular letterhead of his company.

INVESTMENT SECURITIES.

BOND ISSUES of particular interest to brick and tile manufacturers are mentioned by Franklin W. Morgan, Investment Securities, 1319 First National Bank Bldg., Chicago, Ill., who has under contract bonds of the Gas City Brick Co., Ltd., of Medicine Hat, Alberta, Can., for \$175,000; of the Alberta Foundry and Machine Co., Medicine Hat, Alberta, Can., for \$75,000; the Coral Ridge Clay Products Co., Louisville, Ky., for \$60,000; North American Brick and Clay Products Co., Mansfield, O., for \$200,000; the P. Anderson Brick and Coal Company, Edmondton, Alberta, Can., for \$175,000; the Mt. Cherry Clay Co., Fredericksburg, O., for \$133,000, being the unsold portion of an issue of \$175,000. He also has negotiations on for \$100,000 on the Duro Brick Mfg. Co., Akron, O., besides other prospects which will mature within a few days. For further particulars address Mr. Morgan as above.

NOT UNDERSTOOD.

Not Understood, we gather false impressions
And hug them closer as the years go by,
'Till virtue oft seems to us transgression,
And thus men rise and fall and live and die—
Not Understood.

Not Understood, we make so much of trifles;
The thotless sentence or the fancied slight.
Hast oft destroyed a friendship years in making
And on our souls there falls a chilling blight—
Not Understood.

Oh God, if men could see a little clearer,
Or judge less harshly when they can not see;
Oh God, if men would draw a little nearer
To one another, they'd be nearer then to Thee—
And Understood.

—Author Unknown.

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CLAY "TALKING" POINTS.

We are reminded by the LaClede Christy Bulletin that like Adam the latest talking machine needles are shaped from clay. It has been found that a certain kind of shale properly manipulated makes a splendid needle for reproducing tones from phonograph records. The shale goes through some special treatment before burning to develop its tough qualities, and the dry hard shale is finally shaped into needles somewhat similar in shape to the ordinary steel needle and burned in an electric kiln to a temperature something like 2000 degrees F. It is said these needles will play a record 200 times.

EXPLOSIVES IN INDUSTRY.

WE are now developing many uses of explosives that were not thought of a generation or so ago. Among these is the wide use of explosives in quarrying stone, shale and clay, and even in the use of explosives in agriculture and in various ways in preparation of soil for tillage. And there is entering now a wide variety of explosive products and a number of new ideas which adds interest to this subject. And the subject holds interest for the brick and hollow tile industry from two angles. One is in the use of explosives in garnering clay and shale for brickmaking, and the other is in the fact that authorities on the subject regard structures of brick or hollow building tile as being the safest in which to keep stored the supply of explosives. Buildings for this purpose, it is said, should be dry, well ventilated, and the wall thick enough to be bullet proof. If you haven't studied this matter of explosives lately it should pay you to give a little close attention to some of the literature of the makers of explosives.



THE BRADFORD BRICK CO.



American No. 290 Augur Machine

The Bradford Brick & Tile Co. is one of the best and most carefully operated plants in the world. They make the famous Bradford Brick.

When the plant was remodeled they bought Four American No. 290 Augur brick machines.

Three of these machines were put into operation and the fourth was kept ready for an emergency if anything went wrong.

In several years of continuous operation at capacity "nothing has gone wrong" with any of the 290 machines and Mr. Hanley, of the Bradford Co., says he thinks he "might as well sell that extra emergency machine."

The Three No. 290 machines are handling all the clay delivered to them without trouble or delay.

The Bradford plant is also using three of the American 384 Grinders and three of the American No. 302 Pug Mills.

THE HADFIELD-PENFIELD STEEL CO.

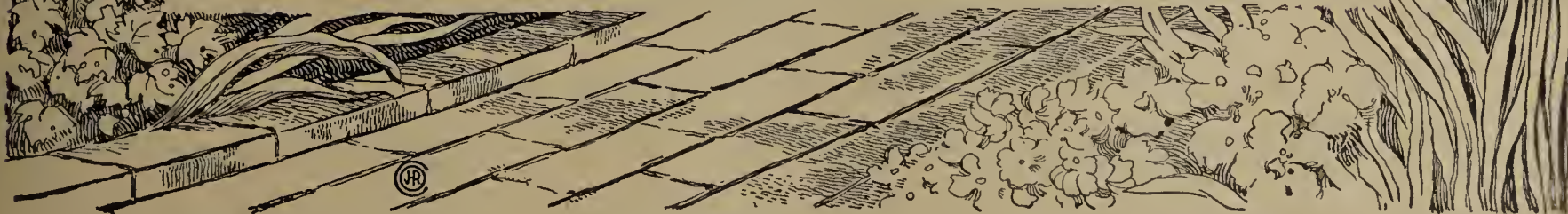
BUCYRUS, OHIO

Formerly The American Clay Mchy. Co.

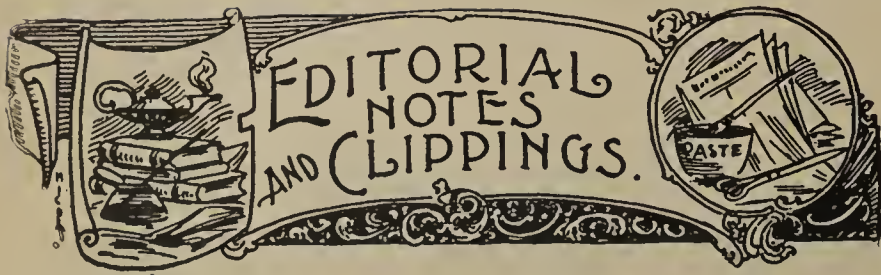
Bradford, Pa., June 22.

The above ad is in accordance with the facts. Would be glad to have you use our name in this connection.

THE BRADFORD BRICK CO.



Mention THE CLAY-WORKER



The Brown Clay Products Company has been incorporated at Canton, Ohio, by Ira E. Brown and O. E. Smith.

The Potomac Face Brick Company is installing new machinery at its plant at Piedmont, W. Va., which will greatly increase its capacity.

The Clinchfield Pottery Works, of which A. W. Hilton is manager, will erect a plant at Marion, N. C., for the manufacture of pots and earthenware.

The Dixie Coal, Lime & Clay Products Company, of which C. E. Thomas is president, will erect a brick plant at Graysville, Tenn., with a daily capacity of 100,000 tons.

The Ozark Iron Ore and Manufacturing Company of Poplar Bluff, Mo., of which W. S. Hooper is president, is contemplating the erection of a pottery in St. Louis for the manufacture of dishes.

Frank Whiting, for a number of years superintendent of the Streator Brick Company, Streator, Ill., resigned July 1. He has made no announcement of his future plans other than to take a much needed vacation.

The Alton (Ill.) Brick Company is having a good demand for paving brick as well as building brick. The company had a good supply on hand when the season opened and is now turning out and shipping all the building brick they can make.

The Ladson Brick & Tile Company, Moultrie, Ga., is one of the new clayworking concerns of Georgia which is fast making a name for itself. The plant which is up-to-date in every respect has daily capacity of 60,000 common and face brick for which there is a steady demand.

Under new ownership and management the brick works at Cowanshannock, Pa., formerly operated under the name of the Kittanning Clay Products Company, resumed operations in full early in July. E. N. Perkins, of Wayland, N. Y., D. D. Cotterell of North Coshocton, N. Y., and James Graham of New York City are said to have acquired the property.

A deal has been closed by the Ada Brick Company, Ada, Okla., which is owned by R. H. Harris & Son, for the construction of a large brick plant at Ardmore, Okla., to cost in the neighborhood of \$100,000. Mr. Harris has a tract of land containing large deposits of shale suitable for building brick. Mr. Harris will divide his time between the plant at Ada and the new one at Ardmore.

Clay mining is on the boom in Gasconade county, Mo., and large orders are being received in the county for the product. Albert Holzschuh, Gene Howard and Henry Zinn are in charge of loading cars for F. A. Toelke at Canaan. D. C. Wyser is having big quantities mined at Owensville and Louis Heidel, F. A. Toelke and John Wehmeyer are loading heavily

at Rosebud. F. A. Toelke has orders for the immediate shipment at 176 cars.

The Houston Clay Products Company has been capitalized at Houston, Tex., for \$10,000 and has W. M. Merritt, C. L. Hunter and George Krueger as its incorporators.

The Lexington Brick Company of Lexington, Ky., has been organized with \$50,000 capital stock. The incorporators are George B. Carey, Ben Myers and James E. McFarland.

Riley C. Taylor is interested in organization of company to establish a plant at Phil Campbell, Ala., for the manufacture of brick, tile and terra cotta. He has had the clay analyzed with very good results.

Jesse Harvey, an employe of the A. P. Green Fire Brick Company of Mexico, Mo., had several of his fingers on the left hand crushed in an accident in the brick machine room. At the hospital, where he was treated, it was reported that the injuries were not serious.

The Hebron Fire and Pressed Brick Company is having a very busy and successful season, their plant at Hebron, N. Dak., being run to capacity. The company has ordered a Fordson tractor with locomotive attachment, which will be used for switching at their clay and coal mines.

Authorized to manufacture and deal in building supplies of all kinds, the Roanoke Brick Company, Inc., of Roanoke, Va., has been granted a charter, the incorporators being listed as D. J. Phipps, president; J. C. Haley, secretary, and W. W. Hobbie, all of Roanoke. Maximum capital was fixed at \$100,000 and minimum at \$1,000.

Fire which started from over heated kilns at the plant of the Hankinson Brick Company, located in North Augusta, S. C., which is just across the river from Augusta, Ga., where the main office of the company is located, caused a damage of between \$6,000 and \$7,000, the latter part of June. The loss is practically covered by insurance.

The Clay Products and Mining Corporation, Fort Payne, Ala., with a capital of \$1,500,000, has been incorporated by W. B. Cubberly and M. J. Smith of Trenton, N. J. Samuel C. Kulp of Trenton also is interested in the company. The company, it is said, plans to acquire the property of the Southern Refractories and Kaolin Company and remodel and enlarge the plant.

Gamble & Stockton Company, Jacksonville, Fla., advise us that business with them is very good, with their plants running to capacity, and prospects reasonably good for several months to come. The Gamble & Stockton Company, of which Telfair Stockton is president, Robert Gamble, vice-president, and C. W. Dixon is secretary and treasurer, are manufacturers and distributors of face brick, common brick, fire brick and roofing, promenade, partition, drain and silo tile. Claude Roper is manager of the sales department.

The Nebraska Manufacturer's Association, with headquarters at Lincoln, has mailed a taxation pamphlet as prepared by the state department of finance, to all members of the association. Early this fall, the association expects to have ready for distribution, a booklet giving information on the brick and tile business in Nebraska, as compiled by the Nebraska Brick & Tile Association. The booklet will further show the many uses of brick and tile. Figures prepared by

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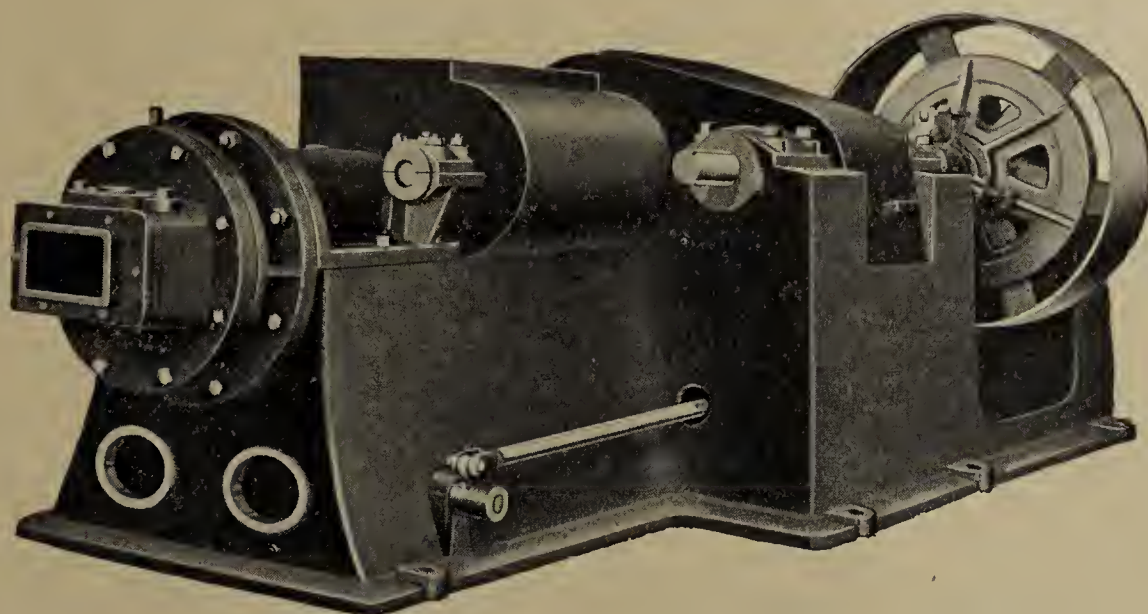
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and

Kushequa (Pa.) Ceramic Co.

have just installed **two** 435 auger machines for Brick and floor tile. Mr. Kane writes,

"The No. 435 machine surely can put the tile across when it has the dust to work with. Our main trouble is to keep anything like enough dust to supply it."

Ask for Bulletin 30.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

the Manufacturers' Association, show that there is invested in Nebraska, over \$245,000,000, with the annual output of these plants valued at \$594,732,000.

The Clearview (Okla.) Brick Plant has been incorporated with a capital of \$30,000 and with James E. Thompson, Mary Doggett and J. W. Swain as the incorporators.

The MuddletyValley Clay Products Company, which was incorporated at Hookerville, W. Va., for \$10,000, has the following incorporators: K. B. McCue, Porter Herold and D. H. Fletcher, all of Persinger, W. Va.

A deal has been consummated by which John J. Moroney, O. S. Carter and John C. Armstrong of Chicago have taken over the plant and business of the Petersburg Face Brick & Tile Company, Petersburg, Ill. The company is capitalized at \$36,000.

The Pittsburgh Brick and Tile Company, which was incorporated at Ashland, Ky., for \$200,000, has purchased 400 acres of land at Summitt and will establish a plant for the manufacture of clay products and will also build a brickyard. The incorporators are A. C. Bailey of Pittsburgh, and W. L. Bybee and S. S. Willis of Ashland.

Pleased with efforts at the production of building brick in their three plants in Brazil and Mecca field, the Lyons Fireproofing Company, operating the old Indiana Paving Brick and Block Company's plant in Brazil, Ind., has decided to begin the manufacture of brick in their various plants. Several changes will be made in the local plant, and it is said that men will be added to the force of workmen.

Six years ago, J. Y. Parker purchased the plant and holdings of the Grant Brick & Tile Company at Santa Barbara, Calif., changed the name of the company to the Parker Brick & Tile Company, and set about building of the business. He has succeeded and has more than doubled the output of the factory and is now not only supplying Santa Barbara with brick, but is pushing hollow tile for residence purposes.

Incorporation papers were filed July 1, by the Ohio Refractories Company, capital stock \$100,000, with M. K. Hitchcock, Henry Heer, James A. Hager, Ben Dillon, George D. Selby and Roger A. Selby, well known Ohio men, of Portsmouth, Ohio, and Norman Adams, of Wheelersburg. The company has purchased the brick plant at Ironton, Ohio, formerly operated by Frank A. Hayward. The plant is being placed in order and will manufacture firebrick under the management of Hitchcock.

The Keeling-Cassidy Brick Company has opened offices at 1009-1010 Candler Building, Atlanta, Ga., for the sale of Denison Interlocking Tile, face brick, common brick, quarrie floor tile, and other burned clay products. The members of the firm are G. W. Keeling and J. A. Cassidy. Mr. Keeling is well-known in the brick business and was formerly vice-president of the B. Mifflin Hood Brick Company, Legg Brick Company, Georgia Brick & Tile Company, Hood's Pottery Clay Products Company, and the Chemical Clay Products Company. Mr. Cassidy was, for several years secretary and treasurer of the Southern Asphalt Association with offices in the Healey Building. He resigned this position to become manager of the building material department of B. Mifflin Hood Brick

Company, and resigned his position with the Hood Brick Company to enter business with Mr. Keeling.

The Bippus Clay Products Company, Goshen, Ind., has been organized to take over and operate the Bippus Tile Company, with plant near Bippus, Huntington county. The new company is capitalized at \$55,000. H. V. D. King, Goshen, heads the new company.

William Lucas, a pioneer brick manufacturer of Portland, Maine, died at his home in that city last month. He came to this country from Ireland in 1866, locating at Dover, N. H., where he started a small brick yard. Later on he moved to Portland and continued in the brick business, and was also interested in the lumber business. His wife and two sons survive.

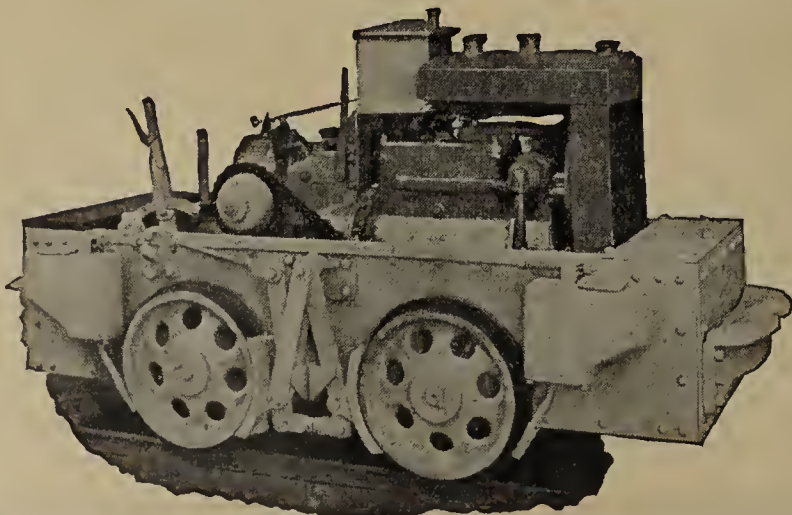
To meet the religious needs of the men employed by the United Clay Mines Corporation, Crossley, N. J., near Tom's River, a chapel and house of worship has been reared. The building was dedicated last Sunday with the entire force of employes attending as well as officials of the company, their families and numerous visitors.

A purchase was made recently by W. P. Fuller & Co. of the entire land and improvements formerly titled "The Steiger Terra Cotta and Pottery Works at San Francisco, Calif. That corporation will now be dissolved, so this entire holding goes to W. P. Fuller & Co. There is more than ten acres of newly acquired water frontage on the bay front, and, with the improvements and all, is valued at something over \$10,000 per acre.

Dwight T. Farnham and Irving A. Berndt, who for some time past have been vice-presidents and members of the firm of C. E. Knoepfel & Co., Inc., announce they have as a result of a mutually arranged reorganization, opened office for the practice of consulting engineering, specializing in investigations, and in management covering administrative control, organization, budgets and financial forecasts, executive costs, production control, waste elimination, etc. Their offices are in the Equitable Trust Building, New York City. Mr. Farnham was for many years identified with the clayworking industry.

The A. P. Green Fire Brick Company of Mexico, Mo., which purchased clay land in Hopkinsville, a suburb of Fulton, is developing its holding and has a large force of men employed there in hoisting the clays and loading it for shipment to its two plants in Mexico. Some houses were removed from the site and the company now has a petition pending before the city council, asking that a section of Third street be closed so that the company can operate without moving its hoisting apparatus. The clay is of a very fine quality and it has barely touched its holdings as yet. Three to four car loads are being shipped a week but operations on a larger scale will be started during the latter part of July, according to James Reed, who is in charge of the operations. The mine has been in operation some time and the pit is 25 feet deep, but there is still 12 feet of clay in it. An electric hoisting apparatus lifts the clay from the bottom of the pit to the loading platform. The sand and gravel is being hauled away as the bed is uncovered and much of this is being used by the city of Fulton to be placed on freshly oiled streets.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

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Bulletins on Request

Written for THE CLAY-WORKER.

WISCONSIN AND MILWAUKEE BRICK AND BUILDING NEWS.



VOLUME of trade continues unabated, according to the reports from leading Milwaukee brick manufacturers and jobbers. Dealers in clay products have been experiencing an unusually good season and the prospects for fall are bright.

Little interest had been evinced at first in the coal strike, but now that coal, oil and coke has taken a tremendous price jump, jobbers and manufacturers begin to feel the effects of the miners' walk-out. Milwaukee, supposedly the most fortunate city in the West, from the manufacturers' point of view, having in its yards thousands of tons of stored coal, is beginning to become pinched from the abnormal demands of the neighboring districts. Coal will soon be at a premium if the walk-out continues, and the resultant high cost of brick manufacture will tend to check the booming trade. Building operations may be discontinued when brick prices are quoted. It is certain that proposed projects will be temporarily postponed.

C. L. Burnham, of the Burnham Brothers Brick Co., Milwaukee, one of the most prominent brick manufacturers in Wisconsin, sums up the situation as follows: "The average manufacturer will still be in a position to manufacture brick for some time to come but the price of his finished product when marketed will be so prohibitive that sales will be checked. When quotations are given on recently manufactured brick, the trade will be surprised at the advances. Coal costs are soaring and it is logical to predict that clay products will take a similar trend. We are already experiencing this situation, for large quantities of imported brick coming through jobbers into Milwaukee are quoted higher than preceding months' price lists."

Referring to building conditions in Milwaukee and Wisconsin and their effect on the clay product markets, Mr. Burnham said: "The building activities started early in the spring are getting under way in full force at this time of the year. Milwaukee's building program is larger by \$4,000,000 than it was last year and a large number of brick jobs are included in this season's lists. At the beginning of July, the building permits issued for June were said to have fallen off slightly from the May average. This should not be taken as an indication that the building boom is over. It shows that this season's operations are not inflated and that the building program is under way in a normal manner. The permits usually are lower for June than they are for May—the slack

periods usually come in July and August when the buildings are in the course of construction. The permits are taken out sometimes a month before any action is started on a building.

"Summer months will find, churches, schools, hotels and public buildings of all kinds in the course of construction in the various Wisconsin cities. The end has not come and the bottom is sound in the clay product markets."

A large number of churches are being built in Wisconsin cities, and a still larger number will soon be in the course of construction. Oskosh, Madison, Waterloo, Beloit, La Crosse and Sparta will soon have churches in the course of construction, all to be built of brick. There are five new churches planned for Milwaukee, alone. City halls will be built in three Wisconsin cities, and two jails, a public auditorium and a number of high schools complete the state program.

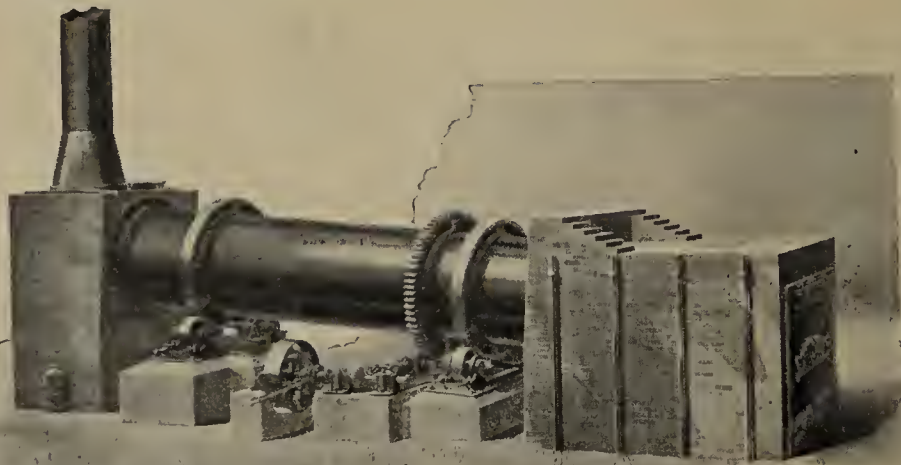
Milwaukee is the center of the brick consuming market in Wisconsin and on every hand brick buildings are seen in the various stages of construction. A Children's Free Hospital that will use approximately 500,000 brick will be built at Seventeenth and Grand avenue. An addition to Mercy Hospital will call for 300,000 brick. Other units of the Jones Island sewerage disposal plant near the city will call for a few thousand common brick. Industrial buildings of the city are not being planned this year. The various industries of Milwaukee are "getting back on their feet," to use the common phrase, and building operations in the form of industrial buildings or additions to factories and the like will no doubt be postponed until fall or until the spring of 1923.

The Kewaunee Brick and Tile Co., Kewaunee, Wis., will soon begin the manufacture of tile, W. J. Watery, manager, announced recently. The Belle W. Hooker brings weekly loads of kiln wood to the company's plant. The company now has this boat chartered to supply the plant with fuel, and orders will soon be filled, said Manager Watery, giving a review of business conditions at the plant.

Omar Gaston, manager of the Watertown Brick Yards, formerly the L. H. Cordes Brick Co., Watertown, announces that the demand for brick has been in excess of the supply and that in an attempt to fill up the increasing orders, the company has installed a modern automatic soft brick machine. Over 500 cars of bricks will be shipped by the company this year, he declared. Hollow brick and tile will also be manufactured. The well-known Watertown cream brick, manufactured by the Watertown Brick Co., is more popular than ever, he declared.

A. BADGER.

The downward tendency in prices has been converted into an up turn.



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO

Burning Clay Products is the **Most Important Problem** of all in the **Industry**. If the **Ware** is not **well burned** it has no **commercial value**. Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

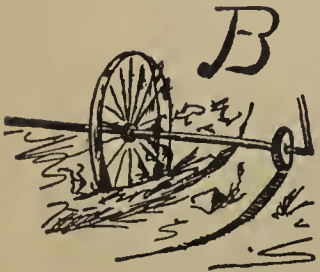
Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and other towns in southern Indiana are holding up well and there has been more construction work done this year up to this time than there was during the corresponding period of last year. The building permits in Evansville showed a large increase

over those for the month of June and June was a better month than was the month of May. As stated in a letter to The Clay-Worker a month or so ago, there is more construction of brick buildings this year than for many years past. Contractors and architects report that they have enough work in sight to keep them busy for several months to come. Some of the towns in this section have more building on hand now than they have had in many years past. Practically no trouble of any kind in the building trades has been reported this year. Bricklayers in most of the towns are getting practically the same scale of wages that they received last year. There is a large shortage of bricklayers in the city of Evansville.

There is a good demand for brick and in fact the demand has been good for the past several years and the brick manufacturers in southern Indiana in most instances are operating their yards on full time and indications are that they will have plenty to do for several months to come. The yards in Evansville are operating steadily and there are calls from many towns in southern Indiana, southern Illinois and western and northern Kentucky for Evansville brick. There are a great many new school buildings and new churches either in the course of erection or being planned in the tri-state section. Several hundred thousand dollars will be spent this year in this line of work. Brick manufacturers in the tri-state section have as yet suffered practically no inconvenience because of the strike of the coal miners that started on April 1. John Andres, secretary and treasurer of the Standard Brick Manufacturing Company at Evansville, says his concern has been enjoying a good trade and he is expecting plenty of orders for several months to come. It is not expected that the strike of the railroad shopmen in the various parts of the country will seriously affect the shipment of brick, and at this writing all railroads entering Evansville report that they are moving their trains on scheduled time and that no shipments of freight have been held up. Many of the towns in southern Indiana report that their business is much better now than it was this time last year and that they are expect-

ing a goodly lot of building between now and the coming of bad weather late in the fall or winter. Building and loan associations are aiding largely in the building of homes and many of these associations have increased their capital stock during the past year in order to take care of the large building programs.

A report from Terre Haute, Ind., a few days ago stated that plans are being made to reopen the plant of the Terre Haute Vitriified Brick Company, which has been closed for the past five years, following the financial difficulties of the company. The plant, which is located near the city, has been prepared for operation and will be opened as soon as the coal strike has been settled, it is announced. Charles Minshall recently purchased the property and has leased the same to Joseph Finwhistle, whose intention it is to operate a modern plant. One of the changes brought about by re-organization will be in the product manufactured, as the new managers intend to manufacture face brick instead of paving brick. Production of the plant will be moderate at first, averaging about 40,000 bricks daily, but the output will be increased a little later on.

Industrial conditions in many of the towns and cities in southern Indiana have been steadily improving during the past few months and there are fewer men now out of employment than at any time since the first of last November. Collections also are better and general business conditions are reported improving from month to month.

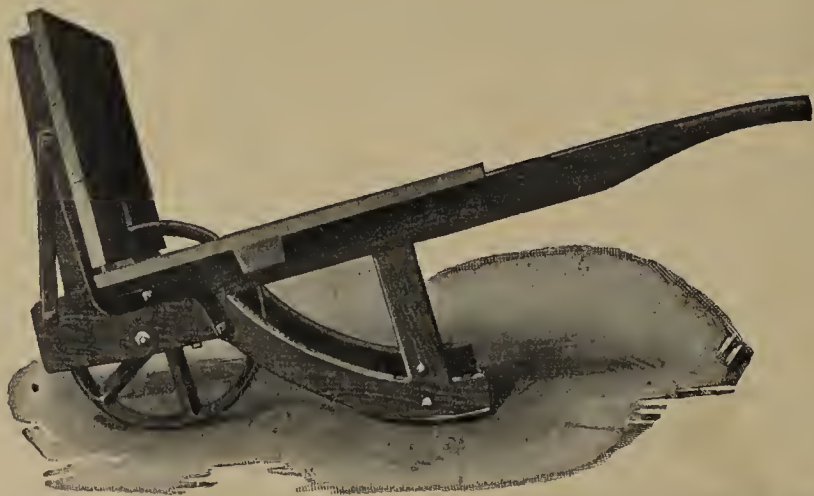
Potteries in Evansville are being operated on steady time and the outlook just now is better than it has been at any time since the first of the present year.

Aaron M. Weil, head of one of the large potteries in Evansville, who has been in failing health for the past several months, is gradually improving and his many friends hope for his full recovery to health in a short time.

The tile manufacturers in southern Indiana towns report an improvement in trade over three months ago and both orders and inquiries have been steadily increasing.

Boonville, Ind., is building several new streets this year and some of the streets are being constructed of brick. A brick road has been ordered by the commissioners of Pike County several miles north of Boonville. The new bridge over White River at Hazelton, Ind., that is being built by the Indiana State Highway Commission, is going forward and it is expected that the structure, which will cost in the neighborhood of a half million dollars, will be completed some time next year. The bridge will prove one of the connecting links in the Dixie Bee Line Highway, that runs from Danville, Ill., to Adams, Tenn., where it will connect with the Dixie Highway.

A HOOSIER.

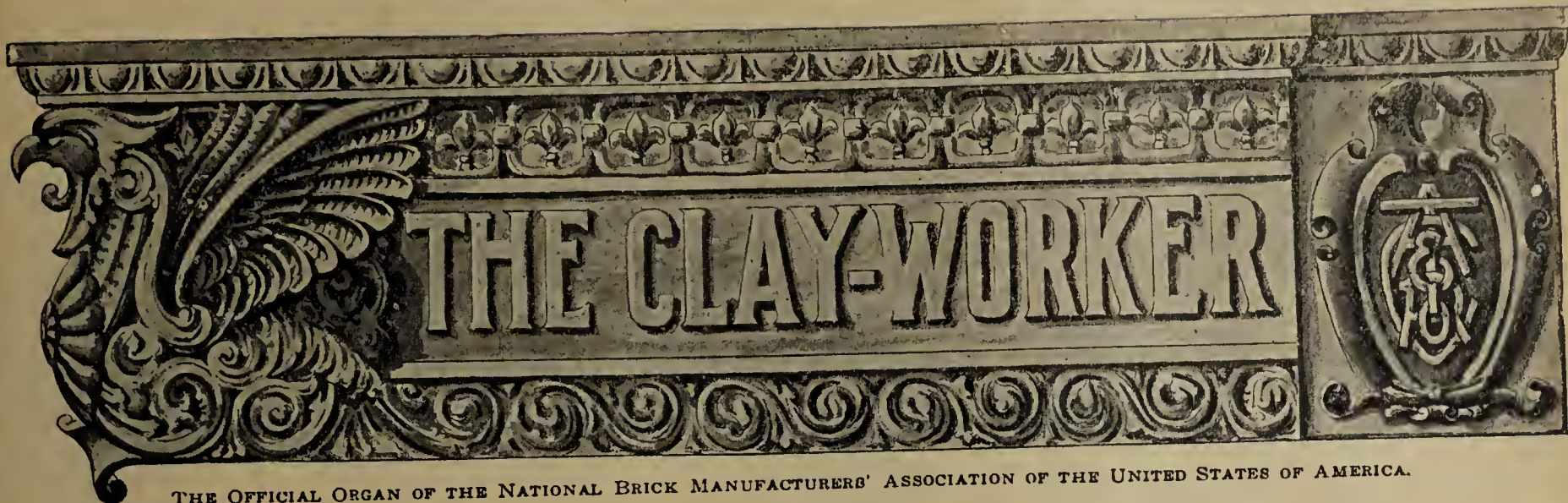


INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

Toronto Foundry & Machine Co.
Toronto, Ohio



Vol. 78

INDIANAPOLIS, AUGUST, 1922.

No. 2

BRICK MONUMENTS: Attractive Structure Built as A Memorial Shows In Its Unique and Artistic Design the Adaptability and Beauty of Brick in Monumental Work. ❖ ❖ ❖ ❖

THROUGHOUT THE AGES, burned clay products have held a prominent and important place in the structural and domestic phases in the lives of the majority of the races that people the world's surface. From even before the days of Babylon, clay products were almost indispensable. Burned clay tablets were the symbol of service, the method of exchange, on them were printed the characters that told in the ancient tongue of the receipt or sale of bartered goods. Water jugs and cooking utensils were formed of clay, clay goods were worshiped, in fact, there was quite a variety of uses of the God-given material, and many of these clay products made thousands of years ago still remain to show their durability though crudely formed to the civilized world. As the march of civilization swept over the world, as man progressed, the number and variety of clay products increased until today the cataloguing of the articles in which clay holds its just proportion of value together with the products made solely of this material, would take a set of books in itself.

There is seemingly no end to the adaptability of burned clay wares. From the dish or vessel throughout the various departments in the household, the vase, the umbrella stand, the book ends, the pictures, the laundry tubs, the sanitary

wares, the house itself, the walks, the fences, the streets, the housing of the electric cables, the insulating wares and through all walks of life from the cradle to the coffin, the burned clay product has been and always will be a great essential due to its utility, adaptability, durability and beauty.

It is therefore not surprising to note that there is being developed today a new use for clay products, the monumental structures decorating the graves of those who have devoted their lives to the building of our homes. Why this has not been considered and actually carried out on a greater and more detailed scale for hundreds of years past is a mystery.

We are glad to see the bricklayers stepping to the fore and not only advocating but erecting in memory of their deceased brothers the monuments of the materials through which they made their livelihood.

The Bricklayer, Mason and Plasterer, the official journal of the bricklayers, masons and plasterers international union, gives in its issue for June a splendid pic-

torial story of the erection of a brick monument in one of the cemeteries of Ft. Worth, Texas, in memory of the deceased members of No. 6 Union at that place.

Al Clyde, of Ft. Worth, Texas, is given credit both for the idea and for the work of laying the brick. As you will note

The Roman Colosseum is in ruins—it was built of stone—

The "Baths of Titus" still stand. They were built of brick.

The monumental buildings in Babylon were erected 3800 years before Christ. Today modern cities are being built with bricks taken from the ruins of Babylon.

Moral: Use Brick, The Everlasting Material.

by studying the illustrations shown on pages 126 and 127, and on the front cover of this issue, it is a splendid piece of brick work carrying in its designs the elements of a seat or resting place and a memorial monument. The base is of red vitrified brick, laid in one-half inch joints of white cement. The rowlock, which forms the summit of the base, was laid without joints, afterwards grouted, the grout being poured through a funnel. The summit of the base on this side forms a seat, and above the seat four set-offs are made in the triangular base to form the square body of the upper work. The base of the west front of the monument, as shown on this page,

base. The sunburst is of red and white brick and needs no description, the difficult cutting and mitering of which clearly denotes the neat and accurate work accomplished. The marble tablet in this view records a verse in memory of the deceased brethren buried in the lot.

The cover page illustration is a view of the north front of the monument, built in conformity with the whole. Two marble tablets are shown on this side. These record the names of the deceased members. The stone cap of the monument is made of granite taken from an old monument used in another part of the cemetery. The work was topped out



View of Monument Erected at Fort Worth, Texas, by Local Bricklayers' Union.

is cut to mitre, rock-faced brick being used to within four inches of each corner up to the summit of the base. The base is built in circular form, as shown by the side view. The brickwork above the base is built of buff brick, with buttressed joints three-sixteenths of an inch in thickness, rodged and cut. The three eight-inch piers, surmounted with marble urns, as shown on each side of the monument in illustration on page 126, are at the extreme east end of the monument to give sufficient room for the sunburst, placed on the east front facing the rising sun.

The illustration on page 127 shows the herring-bone work of the floor, with rock-faced brick to the summit of the

to fit this stone, which bears on both sides, the inscription: BRICKLAYERS' UNION.

This is not only a credit to those who designed and erected it but is a splendid everlasting monument to the bricklayers' craft and to the brick industry. More of this kind of work would not only be showing fine sentiment, but it would be a good testimonial to the brick industry and to bricklaying as well.

Why wait till winter and spring to sell drain tile—why not get busy during the summer and fall canvassing the farm prospects and developing earlier trade?

NEW KAOLIN DEPOSITS FOUND IN THE STATE OF WASHINGTON—NEW WHITEWARE POTTERIES TO BE ESTABLISHED.

WITH THE PRESENT high freight rates and the high cost of fuel and labor, it is natural that some industries endeavor to establish themselves at new localities in which they will derive some benefit from the high freight rates and fuel cost, which acts as a bonus in getting the plants located in new places. One of the chief drawbacks in the establishment of potteries in the Far West until recently was the lack of proper raw materials, but with the finding and discovery of new beds of clay these drawbacks are being overcome more and more. One of the recent discoveries of kaolin in the United States is in the State of Washington, and the announcement of the U. S. Bureau of Mines that

a larger scale, and when we are through we will have complete working data for the use of any one who is interested in the establishing of whiteware pottery in this section.

Whiteware includes all pottery which has a white body, and it includes a number of articles for the household and general use, and the list of articles of common use might be extended indefinitely. The center of whiteware is located at East Liverpool, Ohio, and recently a new whiteware pottery has been built in California.

Professor Wilson stated "That there are two general types of kaolin. Residual kaolin is that which is left as the granite rock is softened. Transported kaolin is that which was sorted and carried away by nature and deposited elsewhere. Transported kaolin is of finer grain, but is more susceptible to cracking. The Washington deposits are residual kaolin, and our tests have shown most encouraging articles



Rear View of Monument Showing Unique Design of Brick Work done in Red Vitrified Brick with Half Inch White Joints.

these kaolins, newly found, have been examined by the Bureau and pronounced excellent, will go a long way to establish whiteware potteries in the State of Washington and bring the pottery industry to the West.

Mr. Clyde E. Williams, superintendent of the Northwest Experiment Station of the U. S. Bureau of Mines, located at the University of Washington at Seattle, states that four deposits of residual kaolin are located at Freeman and Mica, Washington, near Spokane, and at Troy and Moscow, Idaho. The field and laboratory work has been done by Prof. H. Wilson, ceramist for the bureau. These deposits are kaolin of a quality very similar to that from the deposits at Cornwall, England, which are regarded as the standard of the world. We not only have found, so stated Mr. Williams, these deposits, but have worked out methods and have made small samples of whiteware. Now we are going to work on

of whiteware which were subjected to severe and thorough tests. Each deposit has its own individuality, just like a person. What we are doing now is to work out the best methods for the practical utilization of this kaolin in the hope that it will lead to the establishment of a brand new industry in the State of Washington."

The clays mentioned by Professor Wilson have been used to some extent in the making of fire brick for several years, and therefore it is very encouraging inasmuch as the extent and the general run of the kaolins found have been established for several years.

Properly, an efficient burning of clay wares is largely a matter of science, but there must go along with it a goodly share of horse sense and of practical and persistent attention to details during the burning period.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Four—"Transmogrification of the Common Brick."

By W. D. Richardson.

IN TAKING UP this subject, evidently one of the most interesting that was presented at the Indianapolis convention, I realize how much I missed by not being there. Of course, I can express no opinion of the brick that were "pulsichromed" by Mr. Gates' process, since I did not see them. I cannot, however, as an old face brickmaker, pass up the opportunity to give my views of some phases of the subject. If I present the other side of these questions, it must not be understood that I do not appreciate the side that was presented in the paper and discussions, but that it is one of the purposes of this review to present the **other side**, so that a more comprehensive view may be had of the work of a very excellent convention.

Secretary Randall deserves credit for bringing this matter forward and for securing a demonstration of the Gates process on well-known common brick from different localities, his idea, as he expressed it, being "if you can make this character of brick for front purposes out of your common brick, and sell them for a few dollars more than common brick, you are getting somewhere." This conclusion, in the sense that he means, does not necessarily follow the conditions specified. Let me state the case more definitely. "If you can make such a front brick and sell them at a **larger profit** than your regular common brick, you are getting somewhere."

Twenty years ago and more I was general manager of a company whose letter heads and business cards read, "Manufacturer of Superior Face Brick in All Colors and Shapes," and we did what we advertised. We made regularly various shades of buff, specked buff, gray, speckled gray and golden flashed iron-spot brick, and when demanded, other colors as well. It was then the day of ornamental brick and we made everything that the architect designed and specified. We carried immense stocks of all the different colors and a large stock of ornamentals in the various colors. We had thousands of dollars invested in ornamental moulds and issued an elaborate catalog of shapes. We made all these varieties and sold them for "a few dollars more" than our standard brick and we thought that we were "getting somewhere," but we found later that it wasn't where we wanted to be. The prices for specials seemed high but for some reason the large profits didn't show up at the end of the year. We deceived ourselves for a time by our stock inventories, but we never realized on them and many elaborate shapes and odd colors were sold afterwards at any price or used in construction work on the plant. We hadn't then perfected a cost system and it took some years to find out what was the matter. Fortunately, about this time the ornamental brick went out of fashion and terra cotta took its place, but the demand for special color effects continued. A few of us finally got wise to the fact that the money in the face brick business was in making at one plant the fewest possible varieties. We learned that the wise policy was to make a high-grade product of the kind for which our clays were best adapted, make it as distinctive as possible and push the sale of it, so as to keep our plants in steady operation on this one thing alone, and then satisfactory dividends were assured. Let the other fellow make the varieties, and he will generally be the one of limited experience.

Of course, I am aware that the common brick manufacturer has already, to some extent, become a face brick manufacturer, by making his brick a little rougher, burning them a

little harder and more unevenly, and has thus increased his profits. This he may continue to do so long as there are builders who will pay an extra price for rough and freak effects. Also, the common soft-mud brick manufacturers will continue to furnish "selects" or "fronts" at a higher price. This may be the best policy at the average brick plant, but it is a question if the largest profit, in an increasing number of cases, doesn't lie in another direction, especially for those who have the privilege of building a modern, economical plant.

I read, a short time ago, the advice of some prominently successful man to a man seeking active investment in manufacturing lines, to the effect that the best opportunities were in the manufacture of a staple product by the latest developed processes, with the most economical equipment and labor-saving devices and the most efficient organization. I thought that this is surely true of brickmaking, for there is room for vast improvement in this industry. Moreover, we are all familiar with the service rendered manufacturers by government agencies, during and since the war, in urging them to cut down the useless number of sizes and varieties. I realize that no advice can be given on this matter that will apply to all. There are some remote sections of the country where a variety of products must be made in order to keep an expensive plant in operation, but, as a rule, I believe that the common brick manufacturer will get the largest returns from quantity production of quality product, with the latest labor-saving and fuel-saving equipment. If, however, he wants variety, the matt or scratched surface, where the stiff-mud process is employed, only adds a trifle to the cost, and modern kilns, with burning knowledge now available, will meet every reasonable requirement.

Mr. Gates' pulsichrome effects are rather for the face brick manufacturer, in my opinion, and the making of face brick is still a special branch and will continue to be, but even in this line, the advice holds that at each plant few varieties should be made, keep to one thing, if possible, learn to make it well, create a demand for it and build up your reputation on it. If your clay will not produce the colors your market demands, stain the surface of your brick by means of the Gates' apparatus. We experimented with slips and stains twenty-five years ago, in order to still further increase our varieties, but, of course, had no such economical method of applying the colors. Within four blocks of where I am writing is a residence built, years ago, of speckled brick, black blotches on a red brick, made by Lovejoy at Union Furnace, that shows what was done then and what could be done now by the Gates process. There are also buildings in this and other cities with a speckled facade that we produced either by means of grains of manganese or by pyrites cinder. These were dry-press brick. Today we could produce the same specks more cheaply by rolling these grains into the surface of an auger-machine clay bar. Then there is also the Ramsay process of automatically applying a thick slip of veneer to the column of clay at the die of an auger brick machine, giving solid colors in any variety desired.

Now, another question comes up in this connection, applying not only to Gates' pulsichrome, but to all other special efforts to produce artificial effects on a natural, machine-made product. Is one justified in going as far to produce artificial colors or textures in brick as he would be in hand-moulded

art product, like terra cotta? Is not the predominant idea or motive in brickwork stability, with the simple beauty of natural textures and colors, all obtained in a simple, natural way, at moderate cost? Would it be in good taste for a strong, every-day man to adorn himself in costly raiment of silk and satin, with embroidery and lace, though such fine and elaborate dress be perfectly proper for a woman?

Many years ago, before rough texture brick were made in this country, I read, in the *Tonindustrie-Zeitung*, a discussion by prominent German architects as to why the brickwork of the middle ages was generally admired more than modern brickwork. The conclusion was that the state of the brick-making art in that period did not permit of producing the smooth, mechanically perfect and uniformly shaded brick of recent times. Therefore, brick manufacturers were urged not to make the brick so smooth and perfect in finish nor so uniform in shade, but they were also cautioned against any studied roughness, showing a special effort to produce a rough texture. So, as the brickwork of the middle ages was mostly in cloisters, a brick was produced on the auger machine that was called "Kloster-Ziegel."

Later, when J. Parker B. Fiske introduced this idea in America, it became very popular and added much to the beauty of brickwork generally, though it has made the face brick business quite a different proposition. But Fiske did not scratch up the clay bar with nails nor try to scratch a pattern on the brick. He relied upon the simple roughness produced by stretching a wire across the die, a matt surface, and then, by burning so as to bring out the variegated shades, he wove the brick into the wall artistically, aptly using the word "tapestry" to designate the effect produced. The elaborate and studied roughness of much of the brickwork today is not employed by the best architects and must soon decline, being used by builders who want to attract attention. Some years ago, I saw an apartment house in Spokane, just being finished, that went to the limit in roughness. The brick were over-burned in an up-draft kiln until they were fused together, and then when broken apart, there would be irregular, triangular projections of one brick on the other. One might admire such an effect, in passing, but who would want to have his own residence built in this way and be obliged to look upon such a monstrosity daily?

So, in my mind, it is an open question just how far the face brick manufacturer can legitimately go in producing artificial textures and colors. It may be said that the brick manufacturer need not lead in these matters, but produce what the public demands. This may apply to the individual manufacturer, but as an association of manufacturers should we not be educators of correct taste and of correct practices in the artistic as well as in the mechanical features of our industry?

W. D. RICHARDSON.

THE BIG QUESTION OF THE DAY.

The big question of the day is that of stimulating and creating employment. Prosperity on the whole depends largely upon relieving unemployment through providing gainful work for all those who need it. It is being recognized too that a big factor in this question of employment and keeping up business is represented by the building industries. Therefore, there is naturally and properly a centering of attention upon how to speed up construction and to get that full measure of building operations under way which will furnish employment to all those in the trade that need it. This is one of the good signs of the times, the earnest effort going on all around to stimulate structural activities that we may have better prosperity and more of it.

THE CRUX OF AMBITION—THE KEY TO SUCCESS.

"It pays to be happy. Happiness is not a luxury, but a necessity. The beneficial effect of mental sunshine on life, ability, strength, vitality, endurance, is most pronounced."—C. D. Larson.

MANY PEOPLE look upon happiness as something which is too much of a luxury for them ever to hope to possess, quite forgetting that happiness is a real duty, and that when we fail to be happy, we fail in our duty and are slackers in Life's Army of March.

The man who is in business might argue that he could not afford clean linen, and shining windows, and advertising. But people would laugh at him and tell him—if they took the trouble to bother with so silly an individual—that he could not afford to do without these badges of prosperity.

People who think they can not afford to be happy are equally short-sighted, for unhappiness is the absence of happiness, even as cold is the absence of heat. Mental sunshine, or cheerfulness and hopeful, common-sense optimism, have a decided influence upon our ability to get things done; our strength to do them; our vitality to keep going; and our usefulness in life.

Unhappiness, mental depression, gloom, pessimism, doubt, suspicion, and all of the rest of the ugly brood, weaken the nerves, rob us of beauty, drive away our friends, atrophy ambition, and fill us with fear. Fear kills. It was Ossian Lang who said, "A grateful heart is the mainspring of happiness."

Only unselfish people can be grateful. The child should be grateful to be alive, and for home and loving care. The student should be grateful for the evolution of the sciences and cultural subjects throughout the ages; for discoveries and inventions; for the self-sacrifice which has made educational institutions possible; and for the opportunity to live and learn and serve. The business man should be grateful that his times are cast in these wonderful days, and that he has the life and strength to bear his part of the burden and privilege of this century's responsibilities.

It is interesting to remember that Christianity is a gospel of gratitude. The Buddhist faith with its boasted philosophy of extreme antiquity, knows no gratitude. It carries with it a peculiar system of merits. The follower of Buddha does a good deed only that he may lay up merit so that when he dies his soul will move up in the next incarnation, instead of being obliged to transmigrate to a lower scale.

The Buddhist permits other people to do kind or unselfish things for him, and feels no gratitude because he argues that the benevolent individual is laying up merit marks for himself, and so he, the Buddhist, has no need of appreciation on his own part.

The Buddhist will not step on a worm—not because he has any sympathy for the worm, or the beetle, or the fly, but rather because the creature may contain the soul of one of his ancestors, and if he kills an ancestor, it chops off a lot of his merits and sets him back a few thousand years.

When he has finally crawled from one incarnation to another until he reaches the highest plane of Nirvana, he is rewarded by annihilation. But he can't be wiped out, however, hard he tries, until he gets there.

The presence of gratitude in Christian nations is a barometer of their progress and happiness. It pays to be happy. It pays now and it pays later on. Van Dyke says, "Happiness is not solitary, but social; and so we can never have it without sharing it with others." And Gunsaulus remarks with equal truth: "There is no happiness in having and getting, but only in giving. Half the world is on the wrong scent in the pursuit of happiness."

It is a real art to learn to be happy in the simple things of life, in serving, in doing, in loving, in duty well done, in doing good—in having the courage, the high courage, to be happy at all times.

We talk much about our business assets, our credit, the good will we build up, and the public confidence we establish. To be happy, genuinely happy, is the shortest path to the goal of Success.

Epictetus long ago remarked, "If a man is unhappy, this must be his own fault, for God made all men to be happy."

The most economical cross-section is the circle, being shorter than the square, rectangle, triangle, or any other figure to circumscribe the same area. In addition to this, there is a greater frictional loss at the corners of a square and rectangle and especially triangle, hence these cross-sections must be made correspondingly larger in order to receive the same pull. The square cross-section comes next to the circular, and most kiln stacks are square.

Referring to the elevation of the stack column, a square

for a circular stack in reference to the projected area exposed to the wind.

Theoretical Considerations.

1. **Safety against Crushing of Bottom Course, Concrete and Soil.**—For our theoretical considerations let us assume an average stack as shown in Fig. 2.

The total weight of the brickwork (without the lining) figures 96,000 pounds. The cross-section of the bottom course



Figure 2.

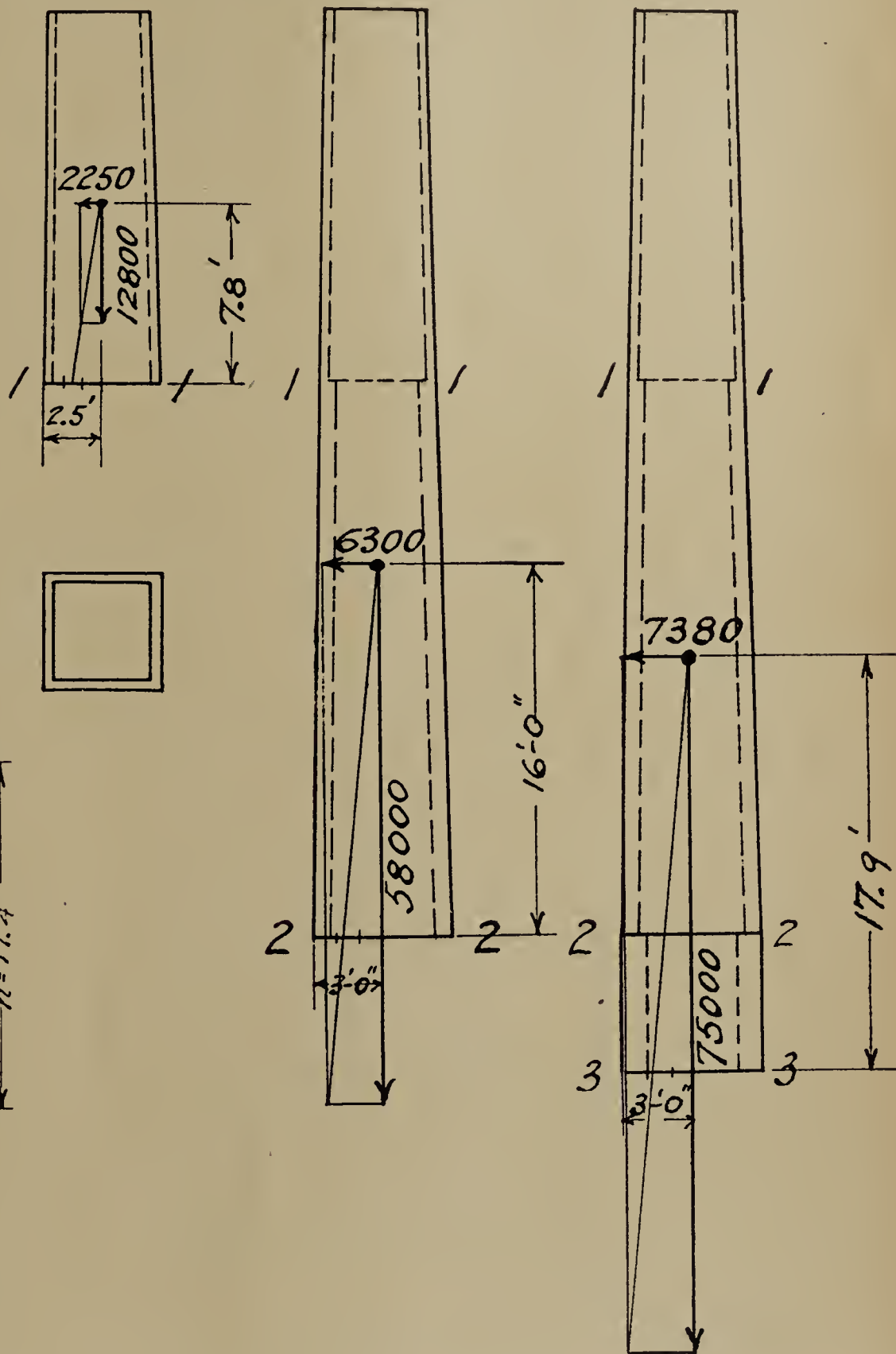


Figure 3.

stack offers a greater surface of resistance to the wind than a circular stack, hence should be made correspondingly stronger. If we call the effective wind surface of a square stack 100 per cent, the effective wind surface of an octagon stack will be 70 per cent and of a circular stack 67 per cent, which is about two-thirds of a square stack. Hence if we assume in our calculations a wind pressure of 30 pounds per square foot for a square stack, we need to figure but 20 pounds

of brick measures 28.75 square feet, which will give a pressure of 3340 pounds per square foot, an amount very far below the allowable compression of brickwork and concrete.

The crushing strength of good brickwork with proper mortar and also of concrete is in the neighborhood of 3000 pounds per square inch, or an allowable safe load of 600 pounds per square inch (with a factor of safety of five), equal to a safe load of about 86,000 pounds per square foot.

Of course, the concrete slab should be heavy enough to

distribute the weight over the soil without cracking or breaking. A two foot slab is heavy enough for any ordinary single or double kiln stack.

Upon the soil below the concrete slab we have a total weight (stack plus lining plus slab) of about 136,000 pounds or 68 tons.

Since the concrete slab measures 56 square feet, the above weight will exert a pressure of 1.2 tons per square foot which is safe for any soil. The allowable bearing values of soils from clay to rock vary from 2 tons to 20 tons per square foot; these values can be found in any engineering hand book.

2. Safety at Base against Overturning Due to Wind Pressure (Fig. 2).—We will consider the stack as an upright column, neglecting the lining and the earth below ground since the lining should be independent and would add but very little to the stability of the stack and the earth may be removed during the construction of the stack.

The effective wind area above ground is 248 square feet. Taking a wind pressure of 30 pounds per square foot, we have a total wind pressure of 7440 pounds. This should be concentrated at the center of gravity of the total stack in reference to the bottom, hence in our case at a distance of 17.4 feet from the bottom. The wind moment or overturning moment then is 7440 times 17.4 equal to 129,456 foot pounds, and the resisting moment 113,000 times 3.75 (weight of stack without lining times distance from center to outer edge of foundation)

and the wind pressure 7380 pounds, resulting in an overturning moment of 7380 times 17.9 or 132,100 foot pounds.

The resisting moment is 75,000 times 3 or 225,000 foot pounds, being 1.7 times larger than the overturning moment.

We have seen that a kiln stack, so far, seems to be a very safe proposition in regard to stability. A kiln stack is very different from a power stack. In the first place it is usually a good deal lower than a power stack, and in the second place

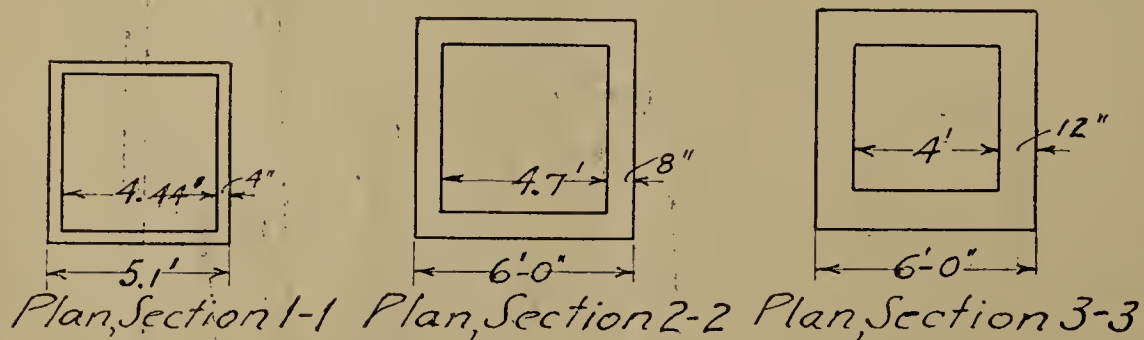


Figure 4.

equal to 423,750 foot pounds, exceeding the overturning moment nearly 3.3 times.

A wind pressure of 7,440 pounds and a stack weight of 113,000 pounds (stack without lining) are graphically shown in Fig. 2 with a resultant but very slightly in excess of 113,000 (stack weight), hence we see that in our case the influence of the wind upon the base is negligible.

3. Safety of Stack Column against Breaking.—In order to investigate the strength and safety of the stack column, it is best to take the bottom of each section. The different sections, marked 1-1, 2-2, 3-3, in Fig. 2, have been redrawn in Fig. 3, showing the forces acting upon each section.

Section 1-1.—The effective wind area is 75 square feet and the wind pressure 2250 pounds acting in the center of gravity of this section. Hence the overturning moment is 2250 times 7.8 equal to 17,550 foot pounds.

The resisting moment is the weight times its lever arm or 12,800 pounds times 2.5 feet equal to 32,000 foot pounds.

We see that the resisting moment is 1.8 times larger than the overturning moment.

Section 2-2.—The effective wind area above this section is 210 square feet and the wind pressure 210 times 30 or 6300 pounds acting in the center of gravity of the total. Hence the overturning moment is 6300 times 16 equal to 100,800 foot pounds. The resisting moment is 58,000 times 3, equal to 174,000 foot pounds, being 1.7 times larger than the overturning moment.

Section 3-3.—The effective wind area is 246 square feet

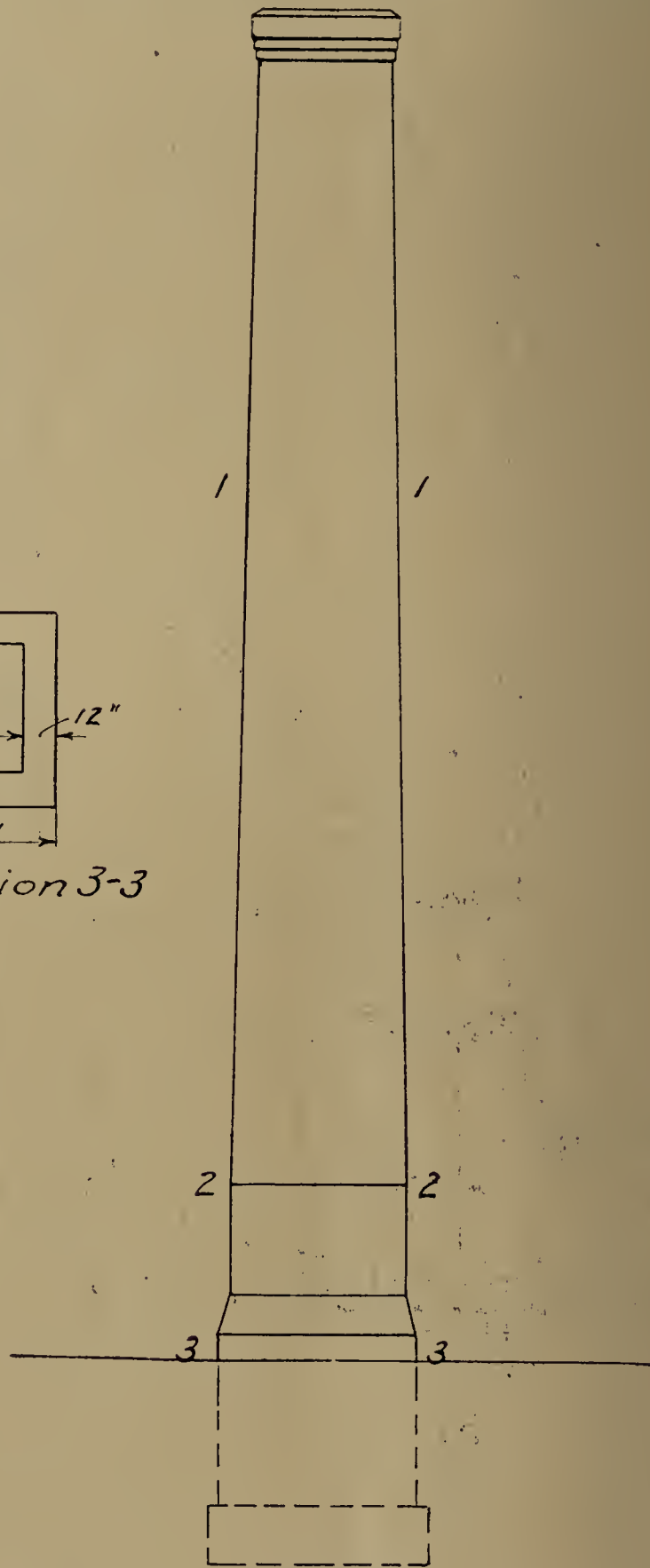


Figure 5.

the base or foundation has to be comparatively large to accommodate the underground draft flues and the additional brickwork around the flue intakes.

However, the above calculations do not take into consideration the thickness of the walls for the various sections, hence it will be necessary to figure the stack sections for compression and tension like ordinary beams, fastened at one end:

If we call

P, weight of stack or stack section

A, area of cross-section

M, bending moment

S, section modulus of cross-section

we get for the fiber stress per square foot the expression

$$f = \frac{P}{A} + \frac{M}{S}$$

where plus stands for half of stack column opposite the wind, and minus for half of stack column facing the wind.

All the calculations are in pounds and feet.

Hence we have:

Section 1-1 (see Fig. 4)

$$P = 12,800$$

$$A = 6.3$$

$$M = 2250 \times 7.8 = 17,550$$

$$S = \frac{5.14 - 4.44}{6 \times 5.1} = 9.4$$

(Section Modulus from any engineering handbook.)

or

$$\begin{aligned} f &= \frac{12,800}{6.3} + \frac{17,550}{9.4} \\ &= 2032 + 1867 \\ &= 3899 \text{ pounds per square foot for side opposite wind} \\ &= 165 \text{ pounds per square foot for side facing wind.} \end{aligned}$$

Section 2-2 (see Fig. 4)

$$P = 58,000$$

$$A = 10.9$$

$$M = 6300 \times 16 = 100,800$$

$$S = \frac{64 - 4.74}{6 \times 6} = 22.4$$

or

$$\begin{aligned} f &= \frac{58,000}{10.9} + \frac{100,800}{22.4} \\ &= 5322 + 4500 \\ &= 9822 \text{ pounds per square foot for side opposite wind} \\ &= 822 \text{ pounds per square foot for side facing wind.} \end{aligned}$$

Section 3-3 (see Fig. 4).

$$P = 75,000$$

$$A = 20$$

$$M = 7380 \times 17.9 = 132,102$$

$$S = 29$$

or

$$\begin{aligned} f &= \frac{75,000}{20} + \frac{132,102}{29} \\ &= 3750 + 4555 \\ &= 8305 \text{ pounds per square foot for side opposite wind} \\ &= -805 \text{ pounds per square foot for side facing wind, being tension.} \end{aligned}$$

These calculations bring out the fact that practically all sections are very safe with the exception of the last section 3-3 where it faces the wind. Since the wind may blow from any direction, it is advisable to strengthen this section all around at the bottom by running the 16-inch wall a few courses higher and stepping down to a 12-inch wall, as shown in Fig. 5.

Refiguring this section now with the above correction, we get for:

Section 3-3 (see Fig. 5).

$$S = \frac{6.75^3 - 4^3}{6 \times 6} = 57$$

$$f = 3750 + \frac{132,102}{57}$$

$$= 3750 + 2317$$

$$= 6067 \text{ pounds per square foot for side opposite wind}$$

$$= 1433 \text{ pounds per square foot for side facing wind.}$$

While small tension values perhaps cannot always be avoided in stack design, yet a correction and hence safeguarding can easily be introduced as illustrated above.

It is necessary to make calculations referring to the thickness of the wall of each section, and it is evident that no other calculation can be considered conclusive as regards stability of stack.

Practical Requirements.

For pointing out the practical requirements we refer to Figs. 6 and 7. In Fig. 6 we have a double and in Fig. 7 a single stack, both being dampered with cold air instead of a sliding gate which is of short life, mostly leaks and seldom works. The stack Fig. 7 is shown tapered while the one in Fig. 6 has perpendicular walls which sometimes can be built quicker with inexperienced bricklayers in tapered work.

A concrete slab at the bottom of the stack is a good feature to distribute the weight uniformly over the soil and to insure uniform settle. However, care must be taken to properly protect the concrete against the heat from the flue to prevent its cracking and disintegration.

It is absolutely necessary to leave an expansion joint, as shown, between the end of the main draft flue from the kiln and the stack.

The main draft flue will naturally be low on account of the kiln bottom, and it is advisable to step up at the outside of the kiln, as shown, and place the entrance to the stack just below ground. Outside of the small saving in excavation, it will enable better access of the outside air for dampering or checking the draft, and also for cooling the kiln after the burn.

It is necessary to strengthen the lower part of the stack sideways of the flue inlets, as shown on plan.

Instead of placing the cold air inlet over the flue as shown, it can also be placed in the bottom of the stack above ground, on any side of the stack except the one facing the kiln. Then we can place the stack closer to the kiln to give more room for coaling. Such an opening could also be used for an auxiliary furnace for getting draft in starting up or watersmoking. However, the damper for such an opening could not be as simple and positive as the plate above the flue opening shown, and the stack would naturally be weakened here unless the opening is kept narrow or the cross-section is strengthened accordingly.

We see the fire-brick lining resting on solid foundation, independent of the outer wall and carried to the top of the stack. The lining is supported by bricks projecting out from the outer wall, two at the corner above each other, as shown in Fig. 8. In order to make sure that the expansion of the lining will not affect the outer brickwork, these projections can be staggered, in other words they go around the stack in form of a spiral and are never opposite one another. The main expansion of the lining, however, is upward and if the coping projects into the stack, there should be left enough space between the bottom of the coping and the top of the lining to allow expansion of the lining upward.

There is no reason why openings should be left in the outer brickwork which will cool the stack and diminish its pull. Only concrete stacks require such openings.

There should be no abrupt change from a heavy to a lighter

wall but it should be done gradually by stepping off the brickwork.

There can be found all sort of copings, but the one illustrated in Fig. 9 we claim to be the most practical one. There is a dry joint in the lining to allow the air to escape from the air space in heating and expansion or a small hole can be left in the lining somewhere on top. A heavy concrete top and

in form of a closed frame, on top within the brickwork, as shown, to tie the brickwork and keep it from spreading. This can also advantageously be done in each section where a reduction in wall thickness takes place. It is a mistake, however, to use any kind of steel outside of the stack, since it will rust and finally fail. The outside tying of a stack should be resorted to as a means for repairing and safe-

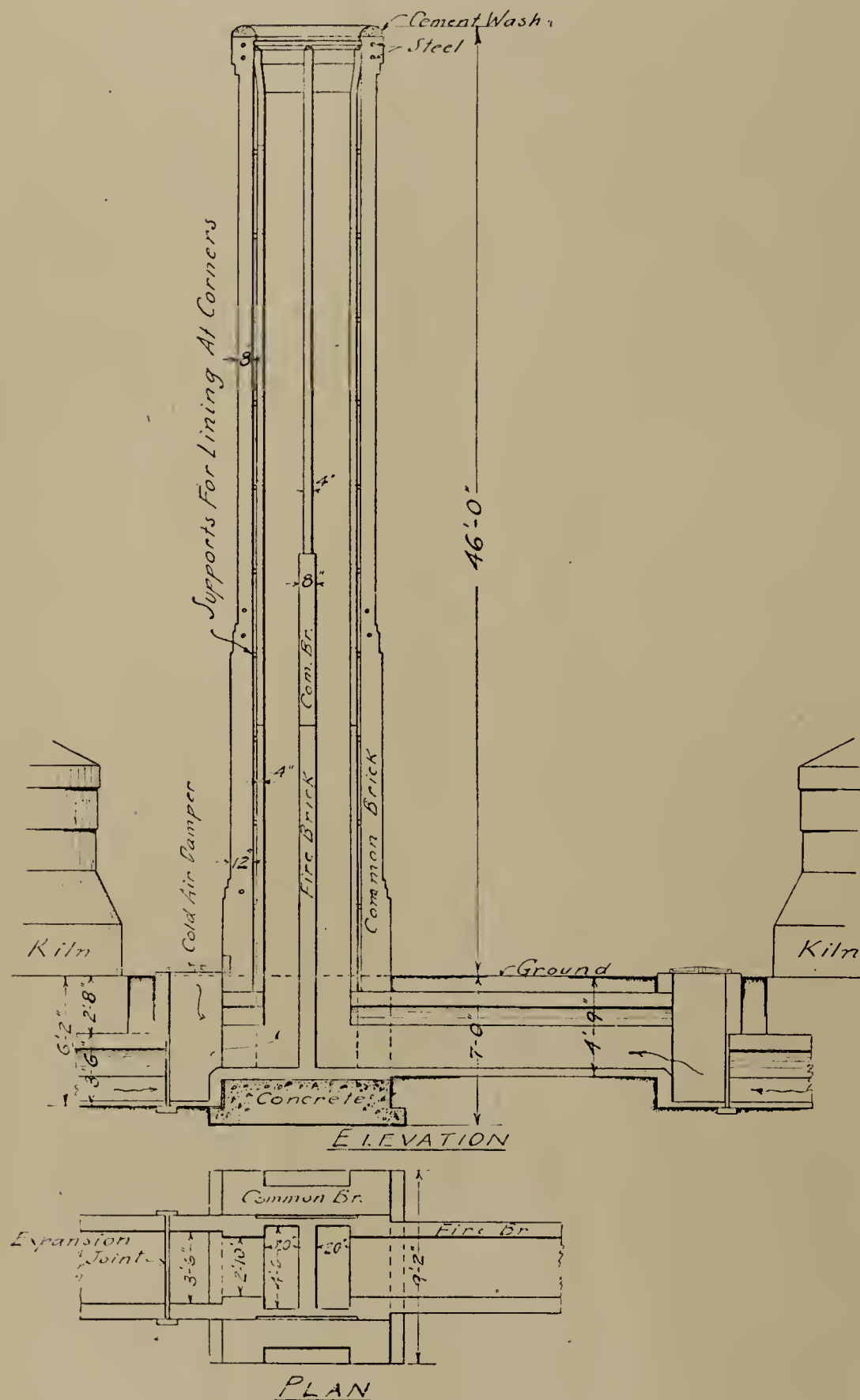


Figure 6.

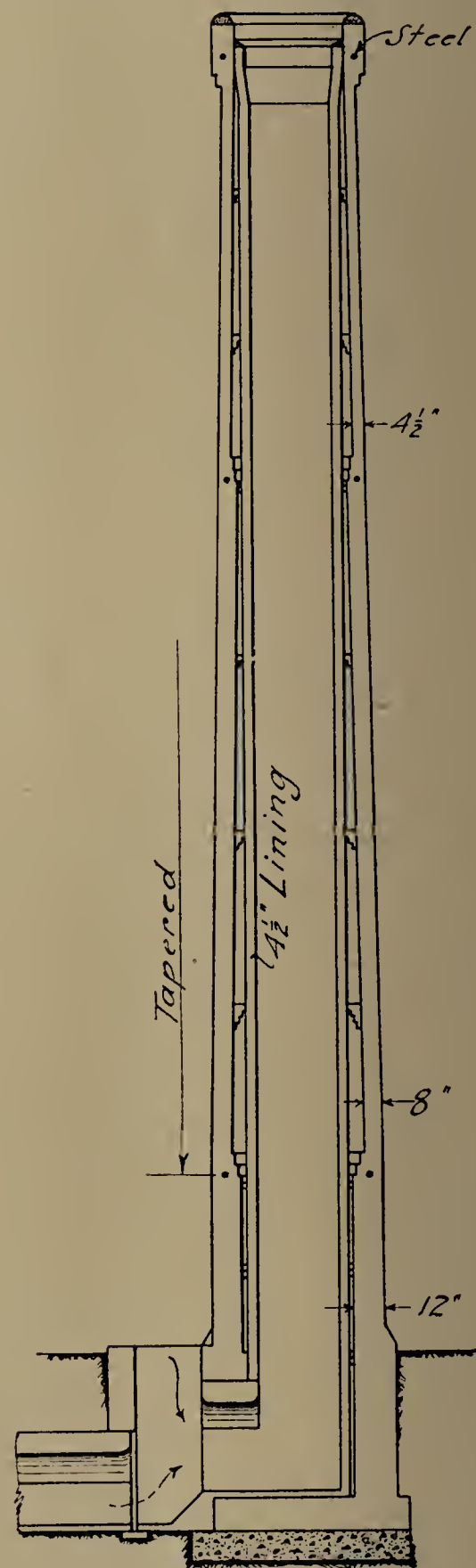


Figure 7.

cement wash over the top will tie the brickwork and shed all water. The lining also should have a cement wash. The cement coping should be put on as dry as possible and covered with wet rags after completion so that the surface does not dry too rapidly causing cracks. It is most important to avoid cracks in the coping because water and frost will commence their gradual destruction here, easily and unseen.

It is very good practice to embed an iron band or iron rod,

guarding a badly cracked stack. A properly constructed stack will not crack.

In nine cases out of ten, if the clayworker has to add more kilns and stacks to his equipment, he will build the stacks just as they have been built before, for only the reason that they stood up and hence evidently are all right. The question whether the stacks have a close margin of safety or are built with a waste of material does not enter into his mind.

Highly theoretical calculations do not have to be made, and we have pointed out a way of checking the safety of a stack with a small amount of mathematical work. The practical pointers given, we believe, are worthy of consideration. The neglect of so-called details may swing the balance from success to failure.

Paxtonville, Pa.

CUTTING OUT THE EXCAVATING.

WHILE DISCUSSING the subject of how to eliminate waste at the organization meeting of the American Construction Council in Washington, D. Knickerbacker Boyd, of Philadelphia, made the suggestion that a great saving in building operations could be effected by cutting out excavations and starting above ground. He says that with modern methods of heating the average house could be built without a cellar, and if we would develop the practice of starting at the ground and building upward we would save a lot of waste energy and cost in building operations.

It is doubtful if this idea will ever be popular in cities but in suburbs and country districts it may find favor and there is no doubt of it being practical. Also there is a suggestion that it might make for a bigger field of opportunities for clay products. It is below the grade lines that concrete shines, and if the basement part of the home or first floor is to be built from grade up it makes it more favorable for the use of hollow building tile and brick. Therefore on selfish grounds the clayworking industry might well endorse this idea.

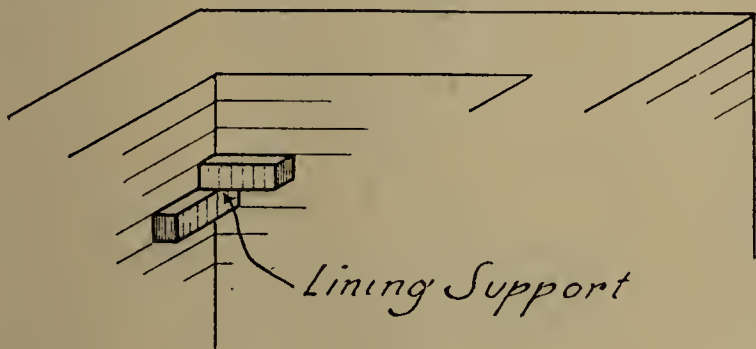


Figure 8.

It would perhaps mean a revival of a type of French architecture that was somewhat familiar in our cities in pioneer days. That if having the first floor of the house either level with or a step or two below the grade line, and the second or main floor some eight feet above, with a small front stoop-like porch with steps going up. This type of architecture has long since gone out of style in this country, but it might be revived with modification to conform more with our own architectural ideas and help reduce the cost of building as well as introduce a new departure in Home Architecture.

FULTON MINERS STAND BY EMPLOYERS.

J. B. Arthur, vice-president and general manager of the A. P. Green Fire Brick Company at Mexico, Mo., and H. B. Plunkett, salesmanager of the same concern, have just reached an agreement with union miners at Fulton, Mo., whereby these men will dig all the coal that is necessary to run the plants of the Green Company at Mexico. The coal miners twice changed their minds about mining coal for outside consumption but an offer of a bonus of 5 cents a bushel, offered by the Mexico company was sufficient to induce them to do the digging. As a result the Green plants will receive about five car loads of coal a day, sufficient to keep them running at a time when the firm is swamped with orders. The Fulton miners had been permitting coal to be shipped to Mexico but when a representative of the United Mine

Workers of America appeared before them and asked that they desist, because it was unfair to the striking miners, the Fulton workers agreed to it. A rather unusual situation prevails in the Fulton field. While the miners have a union it is a local organization and not affiliated with the national organizations. The sympathies of the Fulton miners have been with the United Mine Workers right along. Coal also had been shipped to the fire brick plant at Wellsville and to the Home for Feeble Minded Children at Marshall but these shipments have ceased. The bonus offered to the Fulton miners by the A. P. Green Company will make a big difference in their pay checks as they are working full time now during a period in which they have not been getting in more than a couple of days a week.

IMMENSE QUANTITIES OF RAW CLAY PRODUCED IN JERSEY IN 1921.

PRODUCTION of raw clay in New Jersey, the leading clay-producing state, during 1921 decreased both in quantity and value from the high points reached in 1920 and 1919, according to figures compiled by the State Depart-

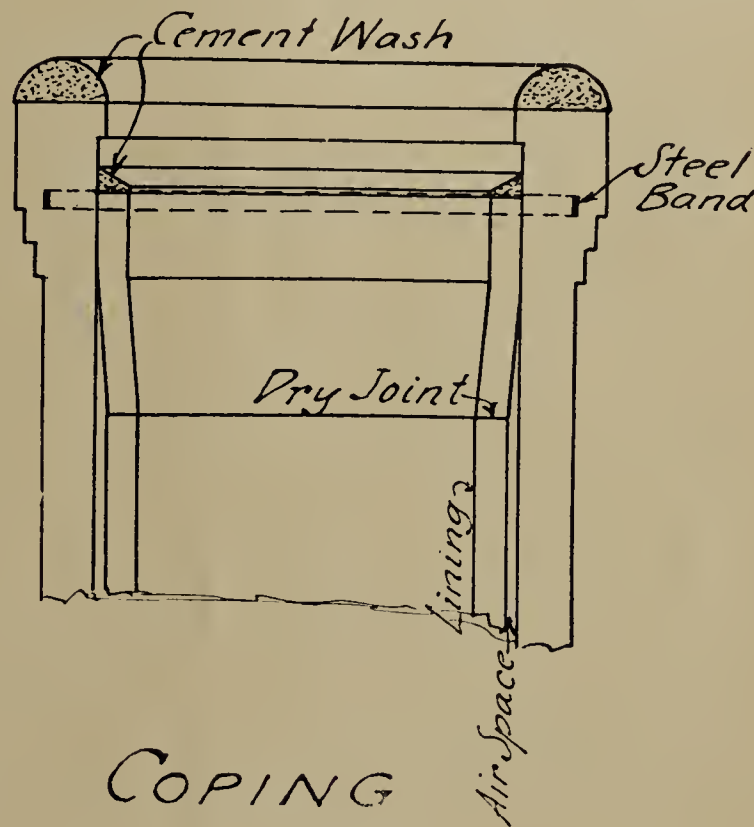


Figure 9.

ment of Conservation and Development in cooperation with the U. S. Geological Survey.

A total of 263,178 short tons valued at \$1,049,748 was produced in the state in 1921 while the corresponding figures for 1920 were 354,613 short tons valued at \$1,656,867. These figures represent only those clays which are mined and sold as clay, and not those which are mined and used directly by the manufacturer.

Ball clay alone showed an increase. This is a high grade material used along with other clays imported into the state in making the clay body for pottery. The 1921 tonnage of 8,230 short tons was 65 percent greater than that of 1920; the value of the yield for 1921 is placed at \$62,638, while that for 1920 was \$43,157.

Other clays included in the raw clay group together with the 1921 figures are: fire clay, 195,572 short tons valued at \$842,257; stoneware clay, 16,354 short tons valued at \$71,919; and miscellaneous clays, 43,022 short tons valued at \$72,934.

Regardless of the amount done, one of the characteristics of the season should be better building.

THE PURCHASE OF REFRACTORIES.*

By W. A. Hull, Chief, Refractories Section, Bureau of Standards, Washington, D. C.



THE GOVERNMENT has gone in for business methods, and one of the things that is getting a beneficial shaking up is the system purchasing. Now it so happens that there is, in the Federal Government, a Department of Commerce. There are several classes of people in the United States, including many of our important manufacturers, who are not as keenly or as constantly aware of the existence of the Department of Commerce as of one or two of the other Departments. Some of them doubtless think of the Department of Commerce simply as the Department of which Mr. Hoover is secretary. Well, that is not a bad introduction to it, in case one has never made its acquaintance before. Not only is Mr. Hoover secretary, but the whole Department knows he is secretary and has known it for some time. He has taken the secret out of secretary and given the Department a dynamic form of government. That is a mighty good thing, for the Department of Commerce is naturally called on for full steam ahead.

It was entirely logical and natural that the Bureau of the Budget, in taking up the problem of systematizing the Federal purchases, should find some things lacking in the matter of specifications. This led to the creation, by executive order, of a Federal Specifications Board, with Dr. Stratton, director of the Bureau of Standards, as chairman. Now the matter of specifications was by no means new to the Bureau of Standards, or to Director Stratton or to Mr. Hoover. In fact, Mr. Hoover had made a most impressive demonstration of what could be done with specifications—of the right kind and used in the right way. In making war-time purchases of clothing, blankets and provisions for use in the Belgian Relief work, he had been amazed at the extremely reasonable prices at which goods of excellent quality could be obtained by the purchase of a large quantity of a single article to be made to a simple, definite specification. Now to make a specification, it is necessary to have standards of quality. Mr. Hoover found the Bureau of Standards working on standards of quality and he gave the signal to step on the gas.

And this is merely a bit of current history to make it clear why the Bureau of Standards is interested in the purchase of refractories.

The guiding star in all the research work on standards of quality and in the preparation of specifications is the elimination of waste. Standards of quality tend to prevent uncertainty and confusion. They tend to prevent the purchase of high priced things where low priced things would do as well; they tend to prevent the use of low priced things where high priced things are required and would be an economy; and sometimes they prevent buying the high priced thing when there is a better quality to be had at a lower price. This last occurrence is not at all unusual—not nearly as uncommon as it should be.

At the Bureau of Standards we receive requests from consumers for specifications for all sorts of things. Those who make these requests want something that will insure their getting good goods. They cannot be guided entirely by the price of these things nor by what the advertisements say about them. In some cases it is extremely difficult to judge

of relative values by performance in service. Take paints, for example, and lubricating oils; you manufacturers know how hard it is to tell what you are getting for your money in things like this. The same is true, though to a less extent, in the purchase of dishes. Large purchasers of hotel china are keenly interested in standard tests for tableware and the bureau is supplying them. Until these tests were put in use we did not know that we were making better hotel china at home than we were importing from Germany, England and even from France. Now that we are testing dishes, we can say that when specifications for this class of goods go into effect, the foreign producers will have something to worry about besides the tariff.

A number of the Governmental Departments are considerable users of refractories, and one of the things that the Federal Specifications Board has taken up is specifications for refractories. A survey of the situation brought out the fact that the purchasing methods of the various Departments were not at all the same. One Department was buying on specifications and another was not, and the specifications of one Department were not similar to those of another. As a result of this condition, the Bureau of Standards was asked to draft



Walter A. Hull, Washington, D. C.

specifications for the types of refractories that are purchased by the Government Departments.

Now, the less one knows about refractories, the easier it is to write specifications. Perhaps it would be better to say that in order to make a good job of it, it is necessary to have a large amount of information and at the same time a reasonable allowance of common sense. Now at the Bureau of Standards we may have common sense enough for a job like this—anyhow, we had sense enough to know that we didn't have anywhere near enough information; so we sent for more. As a result, some of the best equipped men in the United States, from both the producing and a number of consuming industries, have responded to the invitation to join forces and work this thing out together. Two of these conferences have been held. At the first, the whole subject of tests was discussed, up one side and down the other. Everyone's opinion on every standard or near standard test was brought out. The effect was that of clearing the decks for action. In the second conference, a complete set of requirements for fire brick for coal fired boilers was drawn up. Of course, there are special conditions encountered in the use of different kinds of coal in different types of boiler furnaces, and it would be impossible for any group of men to draw up in one day specifications for all the special qualities of refractories that would be best suited to meet them. We thought we had done a day's work when we had expressed, in terms of simple test requirements,

*Published by permission of the Director, Bureau of Standards. Read before the Refractories Manufacturers' Association, Chicago, March 15, 1922.

what we would consider a satisfactory grade of brick to take care of the common run of modern, high duty, coal fired boiler service, but we put in a little overtime and wrote up the requirements for the clay.

Of course these requirements have not been decided on in anything like a final way, but we have a conviction that that day's work is a milestone in the progress of the refractories industry, for this is the first instance that we know of where American producers and consumers have joined forces and drafted even a tentative set of specifications for refractories for a specific service. It may be that it is only now that the industries are ready for such a thing. The activities of your Association have unquestionably had much to do with bringing the refractories manufacturers to a state of mind necessary to a whole-hearted co-operation in a job like that. Association activities have a remarkable effect on the members of an association and on an industry. We have seen how it works out in other industries, and it requires no supernatural vision to see how it is working out in yours.

One of the things that has been made evident by these conferences that have been held at the Bureau of Standards is that there is a wealth of information about refractories under cover. Perhaps it is too soon to expect it to come out; perhaps the Association is not ready to take the step; but if the cards could all be laid on the table, face up, it would go a long way toward straightening out the whole refractories situation.

What I mean is this: A steel company or a corporation which builds coke ovens makes tests and keeps records of performance and the results, except for certain general facts or conclusions, are held as confidential information; the individual refractories manufacturer and the Refractories Manufacturers' Association make tests and get, when they are able, records of performance, and the results are held as confidential; the Bureau of Standards makes a valuable investigation in which the properties of something like seventy brands of fire brick are determined and the results, so far as the names of the brands are concerned, are held as confidential. Think what a help it would be, in the writing of specifications and in the intelligent purchase of refractories, if all this information could come out in the open. I would hardly have the hardihood, at this time, to ask that such a course be followed. I realize that you manufacturers would hesitate to see your pet brands paraded for inspection, stripped of all the bunk and mystery with which your salesmen have kept them clothed and padded for decades; but I want to point out the alternative.

For a long time, we have been deceiving ourselves with the idea that the trouble with the refractories situation is that the user will not pay the price for the quality and the workmanship and the uniformity that he is demanding in refractories and that, consequently, we cannot give them to him. Well, whose fault is it if he will not pay the price? Are most of the big users afflicted with some chronic sort of refractomania which prevents them from following a sound policy in the purchase of this particular class of supplies? Are most of them so lacking in co-ordination between the purchase office and the production and accounting departments that they pay no attention to the effect of the quality of refractories on the cost of a ton of steel or whatever their product may be, or is it possible that they are doing the best they can with the information available?

Is the real trouble the lack of a market for really superior refractories, or difficulty in getting better prices for the common run of refractories? Suppose a purchasing agent does buy the cheapest one of a number of good brands of fire brick rather than the best. Perhaps it is poor economy to do that, but if so, why does he do it? Is it simply that the purchasing

agent is unduly zealous in the matter of making a record, or is it a part of a definite policy of his company? What might you or I do in his place? A number of brands of brick are available, any one of which is known to be suitable for a given purpose. There is a considerable difference in price between what we may term the aristocrats of the lot and some of the lowly ones. No useful facts are available for the guidance of the purchasing agent in evaluating these brands except their general reputations and the records of the production departments; and it has been demonstrated that it is next to impossible to make accurate comparisons of the service of similar kinds of fire brick because of the irregularities and the accidental features of service conditions. What is the reasonable thing for the purchasing agent to do? Can you blame him very much if he solves his problem by driving as hard a bargain as he can and buying that one of a number of suitable brands which he can buy for the least money?

In taking advantage of low prices, a user faces the prospect that he may run into difficulties from variations in quality, from bad workmanship and various defects that he might not encounter to the same extent if he were to purchase from a company which maintains higher standards in these things as well as in price. This does not necessarily follow, however, and the user may feel that he can afford to take the chance, safeguarding himself meanwhile by a rigid system of inspection and testing. Isn't this a fairly reasonable explanation of the procedure followed by some of the consumers and isn't it possible that they are getting away with it to the disadvantage of the refractories industry? Isn't it just possible that the whole industry is suffering from the effects of the secrecy about brands? If the manufacturer who is selling his product at a comparatively low price, had definite figures to show that his brand of brick is as good as he thinks it is—knows it is, possibly, then he might have the nerve to hold out for a decent price and get it. Henry Ford is credited with saying, "Never lock up your engineering department—you may lock out more than you lock in." It seems worth while to consider whether manufacturers do not lose more than they gain when they keep some of their information confidential.

At the Bureau of Standards, we know from the inquiries that we receive, that consumers are eager for information about the qualities of different brands of brick. We do not give it to them because it is confidential information and to that extent we help to keep men in ignorance who are eager for facts. There are two things that in normal times keep the prices of refractories down—the law of supply and demand, and ignorance. Users refuse to pay a premium for superior quality simply because they have no way of knowing they are going to get it. They may not even know when they do get it.

Now the law of supply and demand is something difficult to overcome but the other factor can be controlled and if producers could overcome their inherent bashfulness about brands it would speed up the process of education amazingly.

We feel, at the Bureau of Standards, that this is a time when the refractories manufacturers and the Bureau can be of unusual service to each other and to the consuming industries. By joint effort, yardsticks can be provided for measuring the properties and indirectly determining the values, at least relatively, of the different grades of refractories. We have been paying a great deal of attention to the higher grades and possibly losing sight of the valuable properties of the less refractory grades. Here again is an opportunity for the elimination of waste by promoting, by educational methods, an appreciation of the superior qualities of what we are making and selling as second quality brick. It is wasteful to use brick made from our highly refractory clays where less refractory bricks would give better service, and it is only by educational

methods that the advantages of the special qualities of the grades that are not highly refractory can be capitalized.

Specifications are coming into use—willy nilly, and we believe that the work of the Bureau, in co-operation with such men as have been coming together from both the producing and consuming industries, will prevent, to a considerable extent, the adoption of bad ones, that would cause, rather than prevent, waste. Good specifications, on the other hand, give much promise of a beneficial effect on the whole refractories situation.

There is one thing that we particularly want you all to know about. We have, in the Bureau of Standards, not only the laboratory equipment for research work but the greatest body of trained investigators in the whole world. We want you to know that the co-operation of every part of this institution is available for consultation on any special problems that



Cement Tile Failure, Due to Exposure.

you may have. More than that, the equipment, especially that of our ceramic laboratories, is available in case any of you should wish at any time to do experimental work which would require the temporary use of special furnaces or other laboratory equipment which you do not have. Manufacturers occasionally avail themselves of this privilege and it would probably be done more frequently if manufacturers more generally realized that it could be done. The Bureau is meant to be and is, at your service.

STEEL BAND CONVEYORS.

THE CLAYWORKING industry is familiar with link chain conveyors, and belt conveyors, but there is a new form of metal band conveyors which has been developed in Europe and the idea for which is being introduced into this country. That is a belt conveyor made of a thin steel band instead of the usual rubber, leather or composition belt.

Steel belting was announced in Germany before the war and in reviewing the use of steel bands for power and conveying purposes in the journal of the Western Society of Engineers, Bernard Kruger says that there are over a thousand steel band conveyors at work already handling ordinary materials and some materials which it is not practical to handle with belt conveyors.

While steel belting was announced in prewar days in Germany it has never created a keen interest in this country for power transmission and probably is not likely to, though it may be used for some special undertakings. If it is to have a field of usefulness here it is more likely to be in conveying and elevating equipment than for power transmission proper. It is an interesting proposition from an engineering standpoint but whether or not it will find wide practical favor is a matter that will take time and expenditures to determine. Meantime we are making splendid progress with our well known belt and link chain conveyors and elevators.

CEMENT TILE FAILURE.

CEMENT TILE HAVE caused so many farmers great loss in time, work and money, that we deem it advisable to make the following statement and publish the letter received from a farmer who tried cement tile but had to replace them with clay tile.

Here's the reason:

Many people wonder why cement tile do not stand the test in the form of tile in the ground in underdrainage work. It is simply this; all clay sub-soils contain more or less alkali, this chemical destroys the structure of cement tile. The destruction begins on the inside of the tile and the water passing through washes the sand and gravel out until the tile disappears.

Here's what one farmer who has tried both cement and clay tile has to say:

"Please find enclosed check covering amount for car of drain tile shipped me. You asked me about my opinion of cement tile. My cement tile were put in, in the spring of 1914, by Ben Stell, the tiling were made on the farm. We used Lehigh and Universal brands of cement in the making.



Remains of Cement Tile Used Two Years Above Ground.

They were uniform in size and length and when finished they were hard as rocks and almost unbreakable. I could throw them around almost any way without breaking them. They were beauties and looked like they would last a hundred years.

I have purchased these clay tile of you to replace the cement tile. You ask me what I think of cement tile. I will give you my answer by using the word "failure."

Yours respectfully,

ELISHA WILLIAMS,

R. R. 4, Box 32, Connersville.

Remember if cement products are good they are not cheap and if they are cheap they are not good. Good cement products require a certain definite mixture of good materials and proper manufacture and therefore there are many chances of failure. Cement products are good for certain definite uses but not for underdrainage work in our soils in Indiana. Mr. Williams states his cement tile looked fine and were difficult to break, he little dreamed they would fail. Clay tile have stood the test of fire and will last forever. Why experiment?

You never heard of a farmer replacing clay tile with cement tile.

The accompanying illustrations, kindly loaned by the editor of the Swedish journal "Tegel," show graphically the

failure of cement tile. According to the editor these pictures prove that cement tile is an absolute failure. He declares that farmers should be informed of the fact that cement tile should not be used either under or above the ground in any construction or drainage work on the farm. You will note that the cement tile have been given a fair test; one of the pictures show the tile after nine years under ground, another view shows the appearance of the tile after two years' use below ground, and another cement tile used two years above ground. In every case the tile has failed.

FIRE PREVENTION EXPOSITION.

MANUFACTURERS of fire-resistive materials and of fire-fighting and retarding apparatus, for the first time, will have the opportunity of taking part in a Fire Prevention Exposition to be held October 2 to 7, at the Twenty-second Regiment Armory, New York City, where will be shown, by exhibit and demonstration, what a vital part in the fight against the great annual fire loss is played by fire-safe materials and apparatus.

The exposition originated with the Fire Prevention Com-



Two Years Under Ground Showed Failure of Cement Tile.

mittee of the National Association of Insurance Agents as part of its program of fire prevention activities. It has been endorsed by the National Fire Protection Association, the National Association of Credit Men, by President Frank G. Reynolds of the International Association of Fire Engineers, the National Board of Fire Underwriters and other associations.

The problem of reducing the terrific strain on business caused by preventable fires, that seem to be increasing each year, is one that has long engaged the attention of these organizations. At the present rate of burning, property worth \$1,300,000 is being destroyed each day. This is a financial burden which is borne by business men, for the fire insurance companies, contrary to general belief, do not bear this loss—they simply pay out \$1,300,000 each day that has been paid in to them in premiums by the public.

So great has the strain on business become that on June 26, this year, at the request of these organizations, Governor Ritchie, of Maryland, called a conference of the Governors of New York, New Jersey, Maryland and Virginia. This conference adopted a motion to present the matter of fire waste and conservation to the Chamber of Commerce of the United States and on July 12 a conference of representatives of the

four associations named above and of the American Institute of Electrical Engineers, Railway Fire Protective Association, American Institute of Architects, American Society of Mechanical Engineers and of the Boy Scouts of America was held at Washington.

At the Washington Conference the Chamber of Commerce of the United States was asked to undertake the responsibility of educating organized business men to the huge annual tax caused by fires. President Barnes of the Chamber accepted this responsibility and plans are now under way for a national citizens' fire prevention campaign.

The peak of this year's effort will be reached during National Fire Prevention Week, October 2 to 7, and the First Fire Prevention Exposition will be its greatest educational feature. It is purposed to show, by means of the Exposition, the latest ideas in fire-safe construction and also to demonstrate to the public the proper appliances to be used in fighting and preventing fires.

A lecture hall is in the armory building and it is planned to make each day of the Exposition a special day, with lectures and motion pictures in the lecture hall. One day will probably be devoted to municipal authorities and fire department officials, with addresses on municipal fire prevention and protection. Motion pictures illustrating these will be shown. Another day will be given over to the children, who will be shown what they can do toward helping reduce the fire loss. A third day will be for plant managers and executives, who will be shown the hazards of industrial plants and told how these can be eliminated.

Already requests for space are reaching the Exposition Committee and it is expected that every foot of available space will be taken within a few weeks.



Cement Tile After Nine Years in Drainage System.

A. E. MacKinnon, of 405 Lexington avenue, New York, is chairman of the Exposition Committee, James T. Catlin, Jr., Danville, Va., chairman of the Fire Prevention Committee of the National Association of Insurance Agents, and Frank W. Lawson, American Building, Baltimore, Regional Chairman of the Fire Prevention Committee, with Mr. MacKinnon, compose the Exposition Committee.

BUILDING.

In the main, building is jogging along very nicely with rosy prospects all over the country. The thoughtful ones, however, realize that earnest and thoughtful attention must be centered upon two factors. One is the elimination of wasteful methods in building construction, while the other is the elimination of what is termed labor friction, better working together all around and everywhere a cleaning out of shady practices, trickery and this spirit of antagonism. If the various divisions of the building industry will pull together earnestly and evenly we are in for a great era of prosperity in the building trades and in those industries which manufacture building material.

Written for THE CLAY-WORKER.

WISCONSIN AND MILWAUKEE BRICK AND BUILDING NEWS.



WITH BUILDING figures for the week, month and year continuing to increase over those in the city of Milwaukee for a similar period last year, clayworkers and dealers in clay products are enthusiastic over future prospects notwithstanding the dark clouds that hover on their otherwise sunny horizon, in the form of impending rail tie-ups that threaten to paralyze all brick and tile rail movements. Many jobs in the city of Milwaukee and the state are waiting for shipments of brick to arrive. Building operations in many cases have been suspended for several weeks. Jobbers in Milwaukee declare that they are experiencing great difficulty in securing cars for the transportation of brick and that when suitable transportation has been secured, movement is so slow that many of their patrons have despaired of continuing active building this season.

Within the past two weeks, with settlement of the railroad craftsmen's strike seemingly farther off than ever, there has been a large increase in inquiries for brick and tile shipments with anxious demands as to date of shipment. Builders are hurrying to market attempting to get their orders filled before the situation becomes acute.

A serious outlook is faced by the Wisconsin brick manufacturer who is struck by two bludgeons, speaking of the railroad strike and the coal miner's strike in a figurative sense. Coal is undeniably scarce in all market centers of the northwest and with train service rapidly deteriorating movement of what little coal remains is checked. The manufacturer of clay products is facing a critical period, at this, the intervening period of the spring and full business.

Building operations continue despite the fact that the season had been accepted as over. Rural trade is beginning to improve—it had been slow in getting under way. A large number of schools feature the city and the state's building programs. Manitowoc, Wis., will build a new school requiring 400,000 face brick, 35,000 terra cotta and 80,000 large tile. Tile contracts recently let have been numerous in the Beaver Dam, Merrill, Kaukauna, Oregon and Fond du Lac districts. New schools will be built at Sherwood, Fond du Lac, West Milwaukee, Waukesha, Oconomowoc, Kaukauna, Merrill, Sussex and Oregon. Churches and public building programs are increasing in the smaller communities. Hospitals are under way in the ideal sanitarium districts of Wisconsin's lakes and parks. Edgerton, Mauston, Oshkosh and Fond du Lac, will be the sites of new brick sanitariums. Churches are planned for other cities of the state. The Christian Science churches planned for Wisconsin are especially numerous. Oshkosh, Watton and Edgerton will have religious buildings of that denomination. Brick parsonages are invariably built in addition to the church buildings. The taste of the home building public has turned to brick this year, more so than ever, a prominent Milwaukee jobber declared. Whether it is because of this type of home's coolness in summer, and warmth and heat retaining qualities in the cold Wisconsin winters is a question. The high cost of lumber and the increasing price levels of that product has turned the home builder to brick, it is believed.

The building boom, thought by many wholesalers and jobbers in clay products to be over, is continuing strong as the records of the F. W. Dodge company for Wisconsin show. During the first six months of 1922, construction started in the state was 25 percent in excess of 1921, and operations

have continued to increase, according to the current week's records. Building contracts issued for the past month in the state of Wisconsin amounted to \$8,396,000 an increase of six percent over the preceding month and nine percent over the same month last year. For the first half of 1922, building operations totalled \$40,242,800. Included in the total were the following \$12,280,000 or 30 percent for public works and utilities, largely of brick and tile consumption; \$8,604,000 for residence and private buildings of the smaller classes, comprising 21 percent of the total; \$6,712,700 or 12 percent for educational buildings and \$4,236,000 or 10 percent for business buildings, the latter two invariably of brick and tile construction.

In the city of Milwaukee, the nucleus of building operations in the state, building permits to date total \$5,000,000 more than those of the same period last year. Figures for the year to this date of writing are 19,451 permits valued at \$18,261,093 compared with 17,537 permitted with a valuation of \$13,542,892 for the same period last year.

New projects of importance on the city's schedule yet to be listed with the statistics of the Milwaukee building inspector are: A new Statler Hotel to cost \$1,500,000; a new Elks clubhouse to cost \$1,200,000, and eight large apartment buildings to be constructed just within the limit of the skyscraper zoning ordinance.

A special exhibition of tiles and tile work will be held at the Milwaukee School of Art under the auspices of the Wisconsin chapter of the American Institute of Architects the first two weeks in November it was announced at a meeting of the chapter in the Hotel Pfister, Milwaukee. Seventy-two architects attended. D. Knickerbacker Boyd, Philadelphia, former vice-president and secretary of the institute, and F. W. Walker, secretary of the Associated Tile Workers spoke. "Milwaukee is known all over the country for its excellent tile work," said Mr. Walker. Milwaukee tile workers are of the highest type, he said. There are approximately fifty tile workers in the city.

WHAT ABOUT TRANSPORTATION?

There is a lot of argument, talk, theories and predictions about the business of transportation which fills the air and assails the mind to the point of confusion. There is ship subsidy talks, inland waterway transportation, and railway argument without end. It is the railroad which constitutes the big factor of transportation, and out of the present turmoil something is going to happen to railroads and transportation, but it is not easy yet to see just what. The one impression standing out is that we will not have any marked reduction in freight rates at the present. Eventually our railway lines may be electrified and the business of transportation so far as power is concerned may be entirely reorganized. Right now there is such a muddling lot of confusion in the ideas and theories being advanced and the argument being set forth that it seems like a good time to sit tight and watch until the general turmoil quiets down and there is some actual constructive work of some kind being done.

CASH DISCOUNTS AND TAXES.

We are advised by a bulletin of the Chamber of Commerce of the United States that according to a recent treasury decision, cash discounts will no longer be deductible from sales price in computing manufacturers' tax. This means that if you give a special discount of two or five per cent for cash within so many days in the sale of brick, this can not be deducted from your prices in figuring your tax returns. The ruling reads, "A discount for cash or discount made subsequently to the sale can not be deducted in computing the price for the purpose of the tax."

Written for THE CLAY-WORKER.

A NEW ERA IN FREIGHT RATES.

By C. B. STOWE, Cleveland, Ohio.



THE RAILROADS HAVE acknowledged that their policy in rate-making was lame, and the Interstate Commerce Commission are doing a good work in showing them the way to a logical and simple way of straightening out the worn-out policy of rates based on the amount the traffic will bear.

The first case before the Interstate Commerce Commission, No. 896, on this subject, known as "The Stowe-Fuller Case" was decided June 24, 1907, ordering that classification must be based upon a real distinction from a transportation standpoint, and we can find no difference between the three classes of brick from a transportation standpoint to justify a difference in rates. This was again taken up in 1920, I. C. C. docket 10733, and the same principle of the early decision confirmed in the decision that goes farther, from the fact that it includes other burnt clay material of like nature, as follows:

It is ordered, That the above-named defendants, all railroads east of Rocky Mountains, according as they participate in the transportation, be, and they are hereby notified and required to cease and desist, from publishing, demanding, or collecting for the interstate transportation of brick and other clay products, in carloads, from and to all points in the United States east of the Rocky Mountains, any rates not in accordance with the requirements of the next succeeding paragraphs hereof.

It is further ordered, That said defendants, according as they participate in the transportation, be and they are hereby, notified and required to establish and to maintain and apply a uniform brick list under which all of the articles named below shall be accorded equal rates from and to the same points for interstate transportation, in carloads, from and to all points in the United States east of the Rocky Mountains, subject to a carload minimum weight not exceeding 60,000 pounds, marked capacity of car to govern if less than the minimum:

Brick or block: Building or facing (solid, hollow or perforated) except enameled:

Brick, fire;

Brick or block: Paving, shale or fire clay;

Brick: Salt glazed, when shipped in same manner as building or facing brick;

Ground clay, ground shale or ground fire clay;

Blocks or tile: Hollow building or condensing;

Blocks: Silo, radial-chimney shale, and segment;

Conduits: Clay or shale, not lined;

Slabs: Clay or shale, not enameled, not roofing or ornamental, loaded loose in cars, when shipped in the same manner as building or face brick;

Tile: Hollow building or fireproofing.

The provisions of this paragraph shall not be construed as preventing the inclusion in the uniform brick list of other clay products of similar transportation characteristics: Provided, That the rates for the interstate transportation, for distances not in excess of 150 miles, of common brick, in carloads, viz, brick not vitrified, made from low-grade surface clay, loaded at random to the marked capacity of the car without protection against chipping or breaking, shall not exceed 80 per cent of the corresponding rates contemporaneously maintained on articles in the uniform brick list from and to the same points.

It is further ordered, That said defendants, according as they participate in the transportation, be, and they are hereby, notified and required to establish and to maintain and apply rates for the interstate transportation of articles in the uniform brick list from and to the points named below which shall not exceed the following:

Between Chicago, Ill., and New York, N. Y...33 cents per 100 lbs.
From Danville, Ill., and Attica, Ind., to Chicago...\$1.75 per net ton
From Canton, Ohio, to Chicago, Ill.....\$3.15 per net ton
From Pittsburgh, Pa., to New York, N. Y.....\$4.20 per net ton

It is further ordered, That said defendants, according as they participate in the transportation, be, and they are hereby, notified and required to establish and to maintain and apply short-haul rates for the interstate transportation of articles in the uniform brick list, in carloads, within central territory, including all points in Illinois, and within trunk-line territory, respectively, which shall not exceed the following scales, except where higher rates result from the group and differential adjustment made with relation to established base rates:

Central territory scale

per ton
Rates
Cents

20 miles and under.....	90
21 miles and not over 31.....	105
35 miles and not over 48.....	120
49 miles and not over 65.....	135
66 miles and not over 83.....	150
84 miles and not over 101.....	165
102 miles and not over 124.....	180
125 miles and not over 147.....	195
148 miles and not over 150.....	197

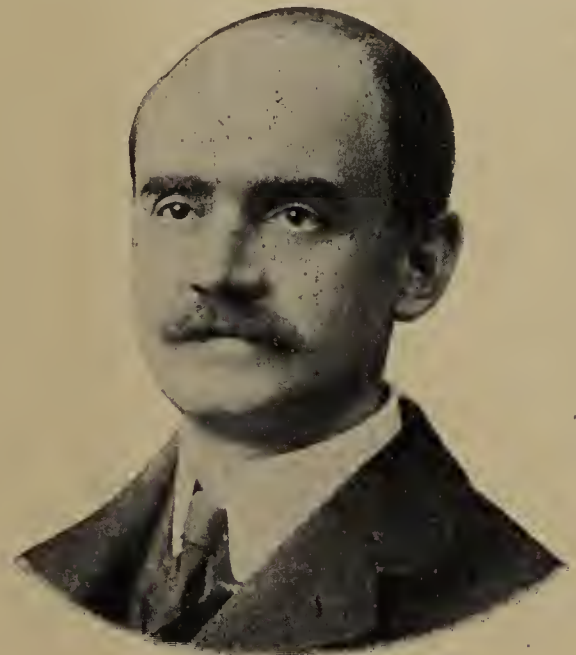
Rates

Trunk-line scale

per ton
Cents

15 miles and under	90
16 miles and not over 25.....	105
26 miles and not over 36.....	120
37 miles and not over 47.....	135
48 miles and not over 59.....	150
60 miles and not over 73.....	165
74 miles and not over 87.....	180
88 miles and not over 101.....	195
102 miles and not over 117.....	210
118 miles and not over 134.....	225
135 miles and not over 150.....	240

It is further ordered, That said defendants, according as they participate in the transportation, be, and they are hereby, notified and required to cease and desist from practicing the undue prejudice, undue preference and advantage, and unjust discrimination found in said report to exist in the relation of the intrastate rates on articles in the uniform brick list, in carloads, from Danville,



C. B. Stowe, Cleveland, Ohio.

Ill., to Chicago, Ill., on the one hand, and the interstate rates on like traffic from Danville, Ill., to Attica, Ind., to Chicago, on the other; and to establish, put in force, and maintain a rate for the intrastate transportation from Danville to Chicago of articles in the uniform brick list prescribed herein, in carloads, which shall not be lower than the corresponding rate contemporaneously maintained by said defendants for the interstate transportation of like traffic from Danville and Attica to Chicago.

And it is further ordered, That this order shall become effective on or before July 12, 1922, upon notice to this commission and to the general public by not less than 15 days' filing and posting in the manner prescribed in section 6 of the interstate commerce act, and remain in force until the further order of the commission.

On account of work required to make up to tariff by agreement with railroads and shippers this order has been carried over to apply Oct. 1, 1922, and all railroads are to comply with same at that time.

This ruling establishes a mileage basis on these materials up to 150 miles, which covers an average of over 90 per cent of the shipments from any plant in any location, and covers the rate east of the Rocky Mountains east and west of the whole matter in regard to shipments east and west of the Missouri River, and south and north of the Ohio River, and allows all shippers to find a market without restrictions, and makes a level of rates which is not only fair, but reasonable.

The next important item in the manufacture of all clay

products is fuel, and coal is the one important item in that line. The railroads have been so up in the air on coal rates that no one seems to be able to straighten them out on any fair basis. Having established the mileage basis in docket I. C. C. 10733 up to 150 miles on brick and clay products, they again decide a mileage basis in docket 6194 on coal as follows:

The I. C. C. has rendered an additional decision in Docket 6194, Holmes and Hallowell Co. vs. Great Northern Railway Co. et al., outlining a scale of rates on bituminous and anthracite moving from northwest docks. The commission's decision and scale of rates follow:

"Upon further consideration we find that the rates of defendants for the interstate transportation of anthracite and bituminous coal, in carloads, from Duluth, Minn., Superior, Wis., and other points at the head of the Lakes taking the same rates, to the destinations specified in the various complaints in Minnesota, North Dakota, and South Dakota east of the Missouri River, are and for the future will be unreasonable to the extent that they exceed the rates per ton of 2,000 pounds set forth in the following table, under the caption "Maximum scales," for the respective distances shown, which rates are found to be reasonable and just for the transportation of the traffic in question:

Distance in miles	Basic scales		Maximum scales	
	Bitu- minous	Anthra- cite	Bitu- minous	Anthra- cite
30 and under.....	\$0.70	\$0.70	\$0.85	\$0.85
40 and over 30.....	.77	.77	.94	.94
50 and over 40.....	.84	.99	1.02	1.20
60 and over 50.....	.91	1.06	1.11	1.29
70 and over 60.....	.98	1.13	1.19	1.37
80 and over 70.....	1.05	1.20	1.28	1.46
90 and over 80.....	1.12	1.27	1.36	1.54
100 and over 90.....	1.19	1.34	1.45	1.63
110 and over 100.....	1.26	1.41	1.53	1.71
120 and over 110.....	1.32	1.47	1.60	1.79
130 and over 120.....	1.38	1.53	1.68	1.86
140 and over 130.....	1.44	1.59	1.75	1.93
150 and over 140.....	1.50	1.65	1.82	2.00
160 and over 150.....	1.56	1.71	1.90	2.08
170 and over 160.....	1.62	1.77	1.97	2.15
180 and over 170.....	1.68	1.83	2.04	2.22
190 and over 180.....	1.74	1.89	2.11	2.30
200 and over 190.....	1.80	1.95	2.19	2.37
210 and over 200.....	1.86	2.01	2.26	2.44
220 and over 210.....	1.92	2.07	2.33	2.52
230 and over 220.....	1.98	2.13	2.41	2.59
240 and over 230.....	2.04	2.19	2.48	2.66
250 and over 240.....	2.10	2.25	2.55	2.73
260 and over 250.....	2.15	2.30	2.61	2.79
270 and over 260.....	2.20	2.35	2.67	2.86
280 and over 270.....	2.25	2.40	2.73	2.92
290 and over 280.....	2.30	2.45	2.79	2.98
300 and over 290.....	2.35	2.50	2.86	3.04
310 and over 300.....	2.40	2.55	2.92	3.10
320 and over 310.....	2.45	2.60	2.98	3.16
330 and over 320.....	2.50	2.65	3.04	3.22
340 and over 330.....	2.55	2.70	3.10	3.28
350 and over 340.....	2.60	2.75	3.16	3.34
360 and over 350.....	2.65	2.80	3.22	3.40
370 and over 360.....	2.70	2.85	3.28	3.46
380 and over 370.....	2.75	2.90	3.34	3.52
390 and over 380.....	2.80	2.95	3.40	3.58
400 and over 390.....	2.85	3.00	3.46	3.65
425 and over 400.....	2.95	3.10	3.58	3.77
450 and over 425.....	3.05	3.20	3.71	3.89
475 and over 450.....	3.15	3.30	3.83	4.01
500 and over 475.....	3.25	3.40	3.95	4.13
525 and over 500.....	3.35	3.50	4.07	4.25
550 and over 525.....	3.45	3.60	4.19	4.37
575 and over 550.....	3.55	3.70	4.31	4.50
600 and over 575.....	3.65	3.80	4.43	4.62
625 and over 600.....	3.75	3.90	4.56	4.74

"In all other respects we affirm the findings in our report of March 8, 1921. An appropriate order will be entered."

Both decisions, I believe, are fair and in line with the present trend of affairs, and is the start of a new and logical basis for rate making. If every manufacturer will look over this scale with the geographical location of the coal supply to his plant on the above tables, I. C. C. 6194, and the location

of his plant to his market, I. C. C. 10733, he cannot help but give credit to the Interstate Commerce Commission for a fair treatment of this important subject on the basic materials of his business. This treatment of freight rates will come in other raw material rates, which would simplify the complex rate situation for all in every line for the railroads, as well as for the manufacturing public on all heavy commodities.

Written for THE CLAY-WORKER.

FABLE OF THE TILE ROOF.

By Lon Jerome Smith



NCE upon a time there lived a man who owned a very desirable piece of land in one of the most beautiful suburbs of a great eastern city. And the man, by industry and thrift, had gathered together sufficient money to build a fine home on his vacant lot.

So he hied him to a contractor who greeted him effusively and who showed him many plans for beautiful, luxurious looking homes, which pleased him. The man selected one that he particularly admired and forthwith construction work on the new home was started.

Not knowing a great deal about roofing problems, the man permitted the contractor to decide on the matter. And the contractor decided on shingles—stained shingles!

Within two months the new home was completed and the man viewed the stately structure with great pride. The roof especially pleased him. It was stained green and provided a delightful contrast to the creamy whiteness of the rest of the house. It looked splendid to the man and he was straightway filled with much joy.

But the winter brought heavy rains and an abundance of snow and the man's joy was turned to gloom, for, lo and behold, the shingles that had looked so attractive began to fade under the stress of the elements. And they soon lost their brilliant color and they cracked in many places and permitted a goodly amount of water to seep through the roof into the man's beautiful home.

And this water did much damage. And the man was exceeding sore and dismayed. And he told the contractor so, but all to no avail. The new roof continued to leak despite repairs—and more repairs!

Now the man had a friend who was a real friend, and who told him he would better have the ugly looking and worthless shingles ripped off the roof of his home and have it re-roofed with burned clay tile. And the man followed his friend's advice and hired another contractor to roof his house with green burned clay tile.

And when the job was finished, it looked even more artistic than had the former green-stained shingles which had pleased him so much until the elements ruined them. And the man was overwhelmed with joy and gladness—and his happiness was permanent, although at the time he didn't know it!

A year passed—three years—five years—and the substantial tile roof retained its attractive green color despite the encroaching elements that did their best to destroy it.

And the man saw that the destructive elements were helpless against the sturdy and beautiful tile roof and noted with great satisfaction that it never leaked, no matter how hard it rained—no matter how much snow melted on it! It faithfully kept his house dry on the inside and at the same time added much to the general artistic appearance of his home on the outside.

And ever afterward the man had no roofing problem to solve—and as long as his home is roofed with tile he is secure in the knowledge that he is fully protected from all the elements.

Moral—ROOF WITH TILE, AND WEAR A SMILE!



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

CONDITIONS IN THE HOLLOW TILE TRADE.

AT THIS WRITING the main worry among manufacturers of hollow building tile is about the fuel supply and getting cars for transportation; otherwise the trade conditions are in very good shape.

J. S. Sleeper, advertising manager of the Hollow Building Tile Association, says that conditions so far as demand is concerned have improved materially during the summer and broadly speaking there is enough demand now to keep all the manufacturers of hollow building tile rather busy. The problems of the day, however, are to get fuel and to get transportation.

Some of the hollow tile manufacturers have coal nearby and are safe from fuel famine, but others have been troubled lately and the main hope all around is that both the coal strike and the railway strike will be adjusted and gotten over in some way so that production may go on uninterrupted. If it does, the year as a whole will prove to be a good one in the volume of hollow tile produced and distributed.

BUILD SILOS.

AN EDITORIAL in the "Courier-Journal" of Louisville, Ky., under the heading, "Build Silos," quotes Thomas P. Cooper, dean of the College of Agriculture, of the University of Kentucky, who gives this advice.

"Kentucky needs more silos if our state is to continue or advance in agriculture. With the great opportunities she possesses for dairying and raising cattle, the agricultural wealth can be increased tremendously by the use of silos."

The editorial goes on then to comment upon the fact that because of high cost in man power, material and so on, the people are inclined to not even fill the silos they have, and makes a plea for not only the filling of present silos but for the building of more silos, because more silos means more agricultural prosperity for the country. It was said, among other things, that a recent survey in Illinois showed that the labor income of farmers who had silos averaged \$375 a year more than the labor income of those who hadn't silos. This leads the college of agriculture to the opinion that Kentucky, which has fourteen thousand silos, should have fifty thousand.

To what extent is this condition true of other states, and to what extent are the hollow building tile manufacturers individually exerting themselves to develop more silo building, and especially the building of more permanent silos, using clay products? There are some we know of who have been conspicuously active in this work. The Adel Clay Products Company in Iowa is a shining example of enterprise in pushing the silo idea, and with it many other ideas for out-

buildings on the farm. The result is benefit both to the clay products concern and to the farmers in Iowa. We should have more of this by others who are manufacturing hollow building tile and are in position to make a silo tile and to boost the silo game in their community.

During the period of deflation and readjustment, when many farming communities were suffering from financial distress, it was almost invariably found that in those sections where there were silos and dairying there was less distress and a better financial condition than was to be found elsewhere among the agricultural people. Indeed we can find plenty of evidence that silos and the dairying play an important part and contribute materially to the stable prosperity of almost any farming community. Therefore, in promoting the building of more silos, the manufacturer of hollow building tile for this purpose is not only making a business for himself but he is doing a good turn for those farmers who buy his products and build the silos.

Promoting silo construction is a work which fits in with a slogan of the Chamber of Commerce of the United States to the effect that anything which is not in the public interest is not good for a business. Conversely, that which is in the public interest is good business; therefore, from the evidence in hand, it is very plain that the promoting of the building of silos is good business.

QUESTIONNAIRE TABULATION.

IF YOU HAVE received one of the questionnaires of the Hollow Building Tile Association and have neglected to answer, get busy, because this information is needed to round out the tabulation of questionnaire returns.

The standards committee, of which C. C. Crockatt, Columbus, is secretary, and H. R. Straight of Adel, Iowa, is chairman, sent out questionnaires covering the matter of sizes and other information about the manufacture of hollow tile, the purpose being to gather information with which to go before the Department of Commerce at Washington for the purpose of eliminating such sizes and shapes as do not justify their use, and setting up simplified standards that will make for economy in production and will also simplify the use of this product.

If you have gotten one of these questionnaires and have not answered it yet, get busy. It may be some trouble to answer some of the questions, but the benefits to come from the efforts of this committee are such that it is well worth the trouble. So get busy and help along with the good work. If you failed to receive a questionnaire and are a manufacturer of hollow building tile, it is an oversight and you should write in to the Hollow Building Tile Association, Conway building, Chicago, and ask for one.

SCHOOL BUILDING IN THE SOUTH.

ATTENTION was recently called to the South doing considerable in the way of new church building, and now comes a review of school development in the South which makes interesting reading and suggests possibilities for brick and hollow tile, because certainly if any building should be permanent and fireproof, it is the school building.

One report has it that the South is in course of spending probably a hundred million dollars in schools. Indeed the figures indicate that there are practically enough buildings under construction or that have been constructed or will be started this year to make this total of a hundred million dollars for southern school buildings.

A news bulletin in hand about what cement is doing to help reduce fire hazards says that in the United States a fire occurs every day in some school. Also that if there is any building that should be absolutely fire safe it is the school house. So no matter whether schools are built in the south country or the north or the middle section, it is a place where the clayworker should be on the job and impressing those in charge of the building that clay products are the things that make such buildings permanent and fire safe.

CRAMER IN NEW ORGANIZATION.

HARRY C. CRAMER, former manager of the Lexington Brick Manufacturing Co., has made a change of base and is now in a new organization. The new organization is the Lexington Clay Products Co., capitalized at \$50,000,



Harry C. Cramer, Lexington, Ky.

which succeeds the Clay-Ingles Building Supply Co., of Lexington, Ky., and is chartered to both manufacture and sell clay products, but its energies for the present are directed at selling only. The officers of the new organization are H. C. Cramer, president; Matt M. Clay, vice-president; Evans S. Ingles, secretary-treasurer. They have made a selling arrangement with a number of brick producing plants serving that territory and their needs are well provided for in the matter of common brick and hollow tile, sewer pipe, etc. And they have a good line of face brick, but are still open for additional face brick lines seeking representation in the blue-grass territory.

The desire to get it done a little cheaper brought the four-inch drain tile back into demand again this year. The chances are, though, that the tide will now turn in favor of larger tile.

THE OPEN SHOP.

THINGS THAT have happened recently in coal and railway circles should impress us that the open shop idea is the way out from that radical domination by labor leaders which leads to chaos. Moreover, it is time to quit mincing words and to talk straight.

When Theodore Roosevelt was President, back in 1902, and there was a coal strike on, he gave a very clear definition of what the open shop stands for as follows:

"No person shall be refused employment, or in any way discriminated against, on account of membership or non-membership in any labor organization; and there shall be no discrimination against, or interference with, any employe who is not a member of any labor organization, by members of such organization."

The closed or union shop leads to strikes and industrial waste and to the hardships which these strikes cause. And it is only a step farther to the order of anarchy which has made a wreck of Russia.

All people have a right to organize for mutual benefit, but no class of organized people has a right either to take the law in its own hands, or to exclude others from any business or calling which they may desire to enter. The sooner we face this fact and the sooner we develop some real anti-strike legislation and ways and means to settle labor disputes without strikes, the better it will be for workers as well as for the people as a whole.

CEMENT ON THE FARM.

THE CEMENT folks are doing things to promote a more extensive use on the farm, which constitute a pace setter and should help awaken greater enterprise on the part of the clay products people.

The Portland Cement Association maintains a department specializing in helpful suggestions to farmers, and including plans and designs for various outbuildings which encourage more work and naturally lead to the use of more cement on the farm. It co-operates with dealers in furnishing plans and ideas for promoting farm work, and furnishes information as to how to carry on concrete work during the cold weather of winter, when the farmers have more time to do this kind of work. Indeed they are manifesting a degree of enterprise here, which, if duplicated in the clayworking industry, should make for bigger business on the farm and for busier times through the fall and winter months.

It is a reminder that every individual manufacturer of clay products which can and should be used more extensively on the farm should get busy these days cultivating the farm trade and stimulating the interest of farmers, not only for farm improvement, but also in qualities of clay products for this work.

A FLAPPER RECIPE.

JOE RICHARDSON, writing in the Glasgow, Kentucky, Times, cuts out the "sugar and spice and everything nice," and offers the following as a recipe for making a flapper:

"Take a bucketful of red paint and dab profusely about a quantity of ordinary clay. Add a pair of pretty legs with speedster ankles; drape in Eve cloth and send to a finishing school while it is soft. After hardening, stand on the mezzanine floor of a first-class hotel for seasoning purposes. If properly taken care of, a flapper of this type will last two years. However, when wear begins to show, discard it, as it is a loss of time and money to undertake a repair."

Written for THE CLAY-WORKER.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAY-WORKING INDUSTRY.



REPORTS RECEIVED here at the Department of Commerce indicate that unless the mining of coal is resumed in considerable volume prior to September 1 the brick output in many sections of the country will practically come to a standstill for lack of fuel. According to reports reaching government authorities here the larger brick producers in Ohio who have contracts with the mines at \$3.50 per ton, which means about \$5.00 to \$5.25 delivered at the plant, are unable to get sufficient coal upon their contracts. They report that when they go into the local markets to buy coal they are forced to pay \$8.50 at the mine or \$10.00 to \$10.50 delivered at their plants. This makes a difference in the actual cost of manufacturing brick of from \$2.50 to \$4.00 per thousand, according to processes used. This situation is said by the Department of Commerce to be typical of many states.

While several manufacturers report restriction of production and increased cost due to the coal situation, but few plants are actually closed down for lack of fuel.

The Census Bureau states that, on the face of reports it has received, the production and shipment of brick in July shows an increase over the preceding month. The ninety-five companies reporting produced last month 106,475,000 brick and shipped from their plants 115,333,000. Practically all of the plants report a considerable volume of unfilled orders on their books. This condition, according to the reports received here, applies to practically all plants in eastern and middle western states, while the reverse condition is prevalent in the South and far West.

The Census Bureau further states that notwithstanding the advanced cost of production, the selling prices of brick held steady all through July, with only slight raises at one or two points; this in spite of the fact that lumber, mill work and labor have shown considerable advances. The clay products industry, the bureau concludes, has not as yet reflected the conditions brought about by the rail and mine strikes.

Will the Restriction Furnish an American Market for Foreign Brick?

Another phase of the brick output restriction, due to the coal stringency, is pointed out by the Department of Commerce officials. This is the possibility of a deluge of European brick. As a matter of fact, this is somewhat more than a possibility, as the Department of Commerce has been advised within the past few days that there is a large quantity of common brick ready for shipment to the United States at several European ports, one of which is Danzig.

According to a statement reaching here from authoritative sources, an investigation has been in progress for some time intended to demonstrate that European brick can be shipped here and sold in competition with American-made brick at \$10.50 per thousand. From the same sources the claim is made that "present conditions seem to make the time for such a test (bringing in foreign brick) ideal."

Common Brick Prices in Forty-six Cities.

The Bureau of the Census reports prices for common brick, per thousand, in forty-six cities on July 15 as follows: Boston, \$22.00; Fitchburg, \$19.00; Haverhill, \$20.00; Fall River, \$22.00; New London, \$17.12; Albany, \$18.50; Buffalo, \$17.12; Niagara Falls, \$17.50; Poughkeepsie, \$18.00; Newark, N. J., \$24.00; Scranton, \$19.50; Reading, \$17.25; Camden, \$20.00; Baltimore, \$18.00; Richmond, \$14.00; Fairmont, \$19.30; Columbia, \$12.00; St. Petersburg, Fla., \$17.00; Savannah,

\$13.50; Pittsburgh, \$16.00; Erie, \$15.75; Cleveland, \$15.00; Akron, \$15.00; Newark, \$21.00; Dayton, \$17.00; Cincinnati, \$17.00; Lansing, \$13.00; Pontiac, \$14.40; Bay City, \$14.00; Flint, \$15.50; Milwaukee, \$11.50; Chicago, \$11.00; Waterloo, \$14.90; Des Moines, \$16.00; Cedar Rapids, \$14.80; Council Bluffs, \$17.50; St. Louis, \$16.35; Kansas City, Mo., \$16.50; Grand Forks, \$14.00; Aberdeen, \$16.50; Sioux Falls, \$15.50; Shreveport, \$15.00; San Antonio, \$13.00; Tucson, \$10.00; San Diego, \$15.00; San Francisco, \$15.50; Indianapolis, \$15.00.

June Stocks and Sales Show Big Increase.

Government statistics covering the brickmaking industry for May and June, 1922, in comparison with June, 1921, show a decided increase in both stocks on hand and shipments (sales). Following are the official figures:

	1921	— 1922 —	
	June	May	June
Fire Clay Brick—			
Production	M 26,967	46,794	48,367
Shipments	M 21,862	44,120	45,772
Stocks, end of month.....	M 142,283	152,259	153,517
New Orders	M 22,397	51,041	57,805
Unfilled orders	M 34,365	45,300	56,861
Silica Brick—			
Production	M 3,879	12,233	11,578
Shipments	M 2,455	10,704	10,676
Stocks, end of month.....	M 42,809	37,845	38,747
Face Brick—			
Production	M 41,303	54,867	59,756
Stocks, in sheds and kilns....	M 118,192	121,540	118,756
Unfilled orders	M 42,476	87,626	89,860
Shipments	M 34,266	56,433	56,762

Scotch Firm Desires American Clay Products.

The Bureau of Foreign and Domestic Commerce, Department of Commerce, reports that it has received from an importing firm in a city in Scotland a request that it be placed in touch with American manufacturers of brick and other clay products of all kinds. The firm desires to purchase outright for cash against shipping documents. Price quotations should be given f. o. b. New York or Baltimore. The concern states that it can furnish satisfactory references. Brick manufacturers who may be interested will be furnished all additional details by addressing the bureau and referring to inquiry No. 2888.

THE ANNUAL FIRE PREVENTION DAY.

THE ANNUAL fire prevention day is October 9, and the week ending with this date is set apart as fire prevention week.

We should lay stress on the prevention part of this and seek to emphasize the idea that an ounce of prevention is worth several pounds of cure. It is a whole lot better to prevent fires than to put them out, and the clayworking industry has a special interest in fire prevention because it has a product that fits in.

So there's a chance for business benefits as well as for doing a good turn if the members of the clayworking industry will show the keen interest they should and help promote interesting and worth while programs for fire prevention week. Mark the date up on your calendar and offer your services to local authorities, because the success of fire prevention week will depend to a great extent upon the active cooperation of all those in each community.

It's an old subject, but it is still an important fact, that we are going to need more bricklayers in the future than we seem to be preparing for now. Are you helping to do anything about it? Why not make use of the Mann trowel? With it more brick can be laid in a given time.



REFRACTORY CEMENTS AND PROTECTIVE COATINGS.

IN CONTINUING the discussion of fire brick in the National Engineer, C. E. Bales, who was quoted in this department of The Clay-Worker for July, says some interesting things about mortars and cements used for laying up fire brick that every manufacturer and dealer in refractory products should keep in mind because it has considerable to do with the satisfaction which refractory products give.

Says Mr. Bales:

"A great many fire brick failures have been traced directly to the improper use of fire clay mortar. Some bricklayers insist on adding various substances to the ground fire clay used in laying fire brick, but it is a dangerous practice and should be stopped. The following are substances most commonly added to fire clay and their effect:

- (1) Common salt. Decreases the refractoriness of fire clay.
- (2) Sand. Decreases the refractoriness of high-grade clays.
- (3) Cement. Decreases the refractoriness of fire clays.
- (4) Water glass. Decreases the refractoriness of fire clays.
- (5) Lime. Decreases the refractoriness of fire clays.
- (6) Asbestos. Decreases the refractoriness of fire clays.
- (7) Fire clay grog. Increases the refractoriness of fire clays.

"A great deal has been said and written about the so-called patented refractory cements and protective coatings, but very few of them have any real merit. A great many of them are really harmful to fire brick as they contain compounds which act as fluxes at high temperatures.

"The most satisfactory material to use in laying up fire brick is a thin batter made of high-grade fire clay to which is added 50 per cent of finely ground fire brick bats. This makes a mortar that has the same composition and refractoriness as the brick itself.

"Carborundum dust, mixed to pasty consistency with water, makes a very good protective coating, but it does not add a great deal to the life of a fire brick.

"A large power plant was induced to try a certain protective coating and in actual service it lasted only fifteen minutes. When the complaint was made the manufacturer made a new compound and it was finally applied to the fire brick. Some time after this the power plant engineer wrote to the manufacturer, stating that he was certainly to be congratulated on this new coating as it was 100 per cent better than his first product. It lasted exactly thirty minutes.

"Another company has tried almost every protective coating on the market but not one of them has come up to ex-

pectations. It is believed, however, that in the future some substance will be found which when applied to fire brick will cause them to give somewhat longer service."

POINTERS ON HOW TO COMBAT CAR SHORTAGE.

Brickmen are now approaching the period of the year when car shortage confronts them. This, in the past, has been due in a large measure to the movement of grain. There are other forces at work this year that will help to produce even a tighter pinch on delivery methods. From present indications, this year will see car shortage even more acute than any of the past years have shown.

One distressing feature at present is the shopmen's strike. This has had the tendency to delay needed repairs on existing rolling stock. Even though their troubles should be smoothed out and they return at once, there is but a remote possibility of their completing the much-needed repairs on a sufficient number of cars to allay any possibility of a shortage. This does not mean there has been a total cessation of repair work, but it has been seriously handicapped.

Among those whose experience takes them into the use of railroad equipment, it is well known that as soon as grain is ready to be moved, it is given preference over other commodities, excepting perishables. This year will see another priority to combat; that is coal.

In view of the foregoing, it is apparent that it would be wise judgment on the parts of shippers to load what cars they have to capacity. By this is meant actual capacity; to unload any cars standing on the side tracks promptly, and to load those to be shipped is as short a time as possible, loading as far as possible on the owning railroad. Statistics of the manufacture of cars, for a period covering the past six to ten years, show that there has not been a sufficient number of cars built to replace those wholly disabled or those laid up for repairs due to ordinary wear and tear.

It would seem prudent, in view of an impending car shortage, that those who have contracts to deliver by rail during this period of priority make a special effort to ship all they possibly can at the earliest possible date. Where possible, it would be well to ship ahead of the contract date.

Where there is a possibility of using a motor truck, this asset is to be highly valued, as it has helped in many cases during the past fortnight in bringing up fuel and delivering clay products faster than they can be burned.

Now is the time to begin planning how to overcome a car shortage, and the foregoing are reminders of what is to be expected, with two priorities, instead of one, to face. Of course, there are several possible solutions, but in general the pointers given above should prove helpful.

Written for THE CLAY-WORKER.

CLAY PRODUCTS AT CHICAGO'S PAGEANT OF PROGRESS

IN ORDER to show that progress has been made in creating building materials that are both beautiful and substantial, the manufacturers and dealers in these lines have set forth some very interesting displays at the big Pageant of Progress held on the Municipal Pier, Chicago, July 29 to August 19.

Probably the most striking of these displays is that arranged by the Chicago Common Brick Company. At one end is a wall of buff surface brick and at the other is an English cottage, built of the same brick, with picturesque gables and a brick wall around it. Within the enclosure is a long table on which were shown a dozen models of houses made of simulated brick, from the modest little cottage to massive country estates and public institutions. A card suggests to the passerby: "Step in and select your new home." Brick seats are constructed inside the booth for the convenience of visitors, and formal trees and shrubs add dignity to the presentation.

The Northwestern Terra Cotta Company show panels and plaques of terra cotta in various pastel tints, and a large picture of the Woolworth building, as well as the models of many buildings in Chicago and New York surfaced with terra cotta.

The Standard Mosaic Tile Company show large door panels and plaques of mosaic tile. The background is of gray, with garlands of pink roses and dark green foliage against which the tiles show very effectively.

The Thomas Moulding Brick Company show a wall of novelty surfaced brick and panels of mouldstone for exterior stucco. At one end is a warning signal: "Stop, Look and Listen! We have millions of these brick in Chicago ready for immediate delivery. Scores of shades and textures."

The Wisconsin Lime and Cement Company show a roof of tile and wall of stucco, with a card saying: "No stucco is permanent unless it is permanently waterproof." Down front, samples of their stucco were displayed.

The Illinois Fireproof Construction Company show a number of specimens of hollow tile of various sizes.

Chicago Face Brick Association shows in the background a wall made of brick, each section being of a different color surface, while down front is a table on which samples of the different bricks are displayed.

BLISS.

MOLYBDENUM AND OTHER ALLOY STEELS.

In the study of molybdenum and other alloy steels, being made by Dr. H. W. Gillett at the Ithaca, N. Y., office of the Bureau of Mines, 600 endurance test pieces have been ground and polished to a special mirror finish ready for testing. These bars will keep two endurance machines busy night and day for probably more than a year.

NEUTRALIZATION OF CARBON MONOXIDE.

No practical means for neutralizing carbon monoxide, the harmful agent in the exhaust from automobile and other internal-combustion motors, has been found, according to the United States Bureau of Mines. One firm is reported working with a chemical, at present used in gas masks, which it is hoped can be adapted to use in connection with internal-combustion motors. This work is still in the experimental stage. The only practical method of overcoming noxious effects from the exhaust of internal-combustion engines in confined space is to supply ample ventilation.

MENTAL GOOD ROADS.

THE GREAT GOOD we are getting from good roads for vehicles to travel on has now led thoughtful writers into commenting upon the benefits which may be derived from the construction of good roads for the human mind to travel. It is pointed out that minds do too much traveling over muddy roads and rough roads, and too often get mired in sloughs of despond, or hung up by evil surroundings, and that today there is a great call for more attention to the subject of laying out, charting and carefully paving good roads along which men's minds may travel with speed and safety to better thoughts, higher progress and better surroundings. The thought is both timely and good.

TO VISUALIZE PREVENTION.

Big National Fire Prevention Exposition Will be Great Educational Treat.

One of the biggest features of National Fire Prevention Week will be National Fire Prevention Exposition to be held beginning October 2 in New York. This exposition, endorsed by the National Association of Insurance Agents, the National Board of Fire Underwriters and other associations interested in educating the public to the common hazards and their elimination and in fire-retarding and fire-fighting devices and fire resistive materials, has also been endorsed by Mr. W. W. Orr, assistant secretary of the National Association of Credit Men, and who is in charge of the fire prevention work of that big organization.

Immediately following the meeting of the conferees on fire prevention, in Washington, July 12, there was held a meeting of representatives of various organizations at which meeting Mr. E. A. MacKinnon, vice-president of the General Expositions Company, which will put on the exposition, explained its purpose and scope.

The great possibilities of the exposition, both as an educational feature and as a means of obtaining national fire prevention publicity, were seen by the men attending this meeting and their endorsement was unanimous.

There will be displays of modern fire apparatus, of fire extinguishers of all kinds, of safety devices, fire-safe building materials and other appliances of interest to factory superintendents, managers and executives, business men, fire department officials, municipal authorities, and the public generally.

Plans are also being laid to have outdoor demonstrations, fire drills by children, tests of fire apparatus, contests between modern and old fire engines and other spectacular features.

It is conceded by those who have discussed the exposition that it should be productive of great good, especially if different days be set aside for special events, such as Children's Day, Governors' Day, Industrial Day, etc.

At the exposition will also be started a movement to form a National Junior Fire Brigade of boys who will aid in every way they can in suppressing and preventing fires.

OXIDATION OF CERAMIC WARES DURING FIRING.

In the study of the oxidation of ceramic wares during firing, being conducted at the Columbus, Ohio, experiment station of the Bureau of Mines, substantial progress is being made in the investigation of the rate of evolution of sulphur dioxide and trioxide at different temperatures and atmospheres. This work has reached a point where it was deemed advisable to check laboratory work with industrial practice. Samples of flue gases at all stages of the burn were recently collected at the plant of the Fallston Fire Clay Company, Fallston, Pa. Observation of the so-called "blue smoke" were made at this plant.



PLANT OF THE HURON CLAY PRODUCTS COMPANY.

THIS SAID, "It is better to be born lucky than rich." Certainly it is a comfortable feeling, that of being born lucky, so it is well to cultivate the idea as best one can and to score a point in the way of good luck whenever opportunity offers. A bit of good luck came my way recently: An invitation to make a trip to Michigan with John C. Boss, of the Boss Engineering Company, Elkhart, Ind., for the purpose of inspecting the brick and tile plant at Croswell, equipped with the Boss system of drying and burning.

That was the chief object of the trip, but we mingled pleasure with business in a very delightful measure. Croswell is some twenty miles north of Port Huron, and that end of the journey was made by auto over fine smooth roads, which permit of speed with comfort. Skirting the lake shore most all of the way, the ozone laden breezes lull one to a pleasant frame of mind that lends a rosy hue to even the commonplace incidents of motor traffic. The daily grind is less wearing in the cool summer atmosphere of the shore region. That is why the crop of summer tourists grows with each recurring season. For many miles the lake shore is dotted



Clay Bank of the Port Huron Brick & Tile Co.

with the homes and resorts of visitors from the south.

In former times, Port Huron was a great lumber center. With the vanishing of the native timber, the city has become an important industrial center of some thirty thousand people, while just across the river on the Canadian side is the interesting city of Sarnia, which now boasts fifteen thousand people and one of the finest beaches in all of the lake region. So far as our trip disclosed, the only wet spot was the lake. Our Canadian neighbors have little or no advantage over visitors from the States so far as liquid refreshments are concerned.

A Modest Modern Brick and Tile Plant.

For some time past we have been of the opinion that the small brick and tile plant was coming back, and in the future plants having a capacity of 40,000 to 100,000 per day would

be the rule and larger plants would be the exception. High freight rates tend to make the brick and tile business a local industry, as it should be. Home industries should always be favored, and particularly an industry furnishing materials for the building of homes. The brick plant was originally started some years ago as an ordinary summer brickyard equipped with the rack and pallet system. Afterward machinery for making drain tile was added and a large two-story dry house was built and the output divided between tile and common building brick.

More recently the owners became more ambitious and decided to make hollow building tile and to re-equip the plant with a view of speeding up the work and economizing in fuel consumption and labor. With this in view the Boss system was adopted and put in operation with decided advantage, so says Frank C. Kussrow, superintendent, who is a born and bred brickmaker, his father having been engaged in the business for many years. With his practical knowledge, both of the clay and the method of handling the ware, success was assured from the beginning.

They have an abundance of good clay, a surface deposit with very little, if any, stripping, which is shoveled by hand into side dump cars and hauled up an incline by cable. It is so easily worked that no disintegrators are required, and it is fed directly into a Fate brick and tile machine, from whence it goes into a Boss tender clay dryer heated by waste heat from the kilns, and, if occasion requires, exhaust steam



Clay Cars at the Foot of the Incline.

from the engine. They formerly had considerable trouble from the checking of the ware for the clay is tender and requires great care in handling in the green state, but the Boss system has obviated that trouble entirely and shortened the time by more than one-half. Whereas it used to take several days to dry the ware it is now dried in eight to ten hours.

Economy and Success of Boss System.

Similar saving and economy have resulted in burning by the Boss system. That part of the work is now done in three days and nights. It formerly took five or six, with a proportionate saving in fuel. They have three round down draft kilns, using forced draft, which is a part of the Boss system. They are now arranging to build a fourth kiln when they feel their equipment will be all that is desired, so far as drying and burning are concerned. They intend to install an automatic cutter in place of the hand cutter now being used. They are making common hollow building tile in two sizes, 4x5x12 and 5x8x12. They make drain tile from three to eight inches, and common end cut building brick of standard size.

The property is owned by local capitalists, Frank Mathews being president; Dr. George Martin, vice-president; Dr. Thomas Kingston, secretary-treasurer, and Fenton Brown, manager. All the officers are residents of Croswell. The

plant is located on a branch of the Pere Marquette railroad with direct connection to Port Huron and other points within a radius of fifty to one hundred miles.

We enjoyed our brief stay in Croswell and appreciated the urgent invitation to pay another visit to the plant, which we will be glad to do, for, in the language of the poet:

"If I could only wish again,
I'd wish and wish again
That I could go to Michigan,
Where I could fish and fish again."

FINE BRICK MANUFACTURED IN PITTSBURGH.

BUILDING OPERATIONS throughout Pittsburg and Allegheny county have had a great impetus during the recent months, according to the Pittsburgh Dispatch, and authoritative reports show that scores of structures are being erected in the district. Within the last few weeks, hundreds



Stock Pile with Boss Kiln in Background.

of permits have been granted for the erection of new buildings, both large and small, and for improvements to be made on older structures.

In all of these operations, well-made brick must be used if the buildings are to stand the test of time. Local property owners desiring to erect new structures or make additions



The Boss Tender Clay Dryer.

to present ones are peculiarly fortunate in that brickmaking is one of Pittsburgh's established industries. Brick for every known purpose has been made in Pittsburgh for many, many years, while the quality of the home product is unsurpassed.

One of the oldest and best known brick manufacturers in that city is the firm of Sankey Brothers, which was founded in 1861, and now located at 2112 Carson street, Southside. The business is still conducted under the original firm name

and is under the management of William E. and Frank M. Sankey.

This firm has an average output of 1,800,000 brick, the regular burning period covering eleven days of twenty-four hours each. Some time ago Sankey Brothers placed a Wilson down-draft kiln in operation, which is said to be the only one of its kind in that district. It is claimed that this kiln is the most modern in use and that its capacity is 190,000 brick. Eventually the company plans to have the entire plant equipped with them.

Included among Sankey Brothers' products are common, hollow, rough texture and smooth-faced brick, which the management says are of equal, if not superior, quality to any found on the market. In addition to quality, the prospective builder is benefited because the price of brick in Pittsburgh, it is claimed, is lower than in a majority of the cities of the United States.

Since 1900 the company has been at its present location. During all of that time the bank from which Sankey Brothers secure their clay has been their only source of supply. In this bank it is estimated that there remains enough clay to make high-quality brick for the next twenty years at the rate of the company's present production.

Brick from the Sankey Brothers' kilns have been placed in many of the larger buildings in Pittsburgh and vicinity



The Boss Grateless Kiln, Mr. Boss and Superintendent Kussrow in Foreground.

Brick purchased from this company were used in the construction of several of the down-town sky scrapers.

BRINGING BUILDING BRICK FROM GERMANY.

The New York City papers announce that Samuel Untermeyer is to supply building brick imported from Germany, and that two boat loads will be delivered at the wharves in Brooklyn in the very near future. It is further stated the brick will be sold at \$10.50 per thousand, about half the present current price of brick in that market. Mr. Untermeyer and his associates hope in this way to increase the amount of home building. It should be borne in mind in this connection that the cost of building brick is a very small percent of the cost of the building. The cost of bricklaying is a much more important item, and Mr. Untermeyer will do well to direct his energies towards reducing the cost of laying brick, and we commend for his careful consideration the Mann trowel. Used intelligently, it will reduce the cost of brick construction and quicken the operation of brick building more effectively than any probable reduction in the price of brick, particularly at this time, when bricklayers in New York City are getting \$30.00 or more for ten hours' work, and laying on an average of not more than 1,000 brick per day.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Cannot Get Along Without The Clay-Worker.

Dear Mr. Randall:

Enclosed find check for another year's subscription to The Clay-Worker. I find I cannot get along without the paper, even if there is not a great deal in it about my end of the game. Long may you and The Clay-Worker live.

Most cordially,

O. L. BACHELDER,
Omar Khayyam Pottery.

North Carolina.

Looks for a Boom in the Fall.

Editor The Clay-Worker:

Enclosed find check to cover my subscription to The Clay-Worker for another year. The brick business has not been very good the last year. I have only made about 225,000 brick this year. We are in the heart of the best coal fields in Colorado on the western slope at the end of the Moffet railroad, but we have had no transportation, as one of the tunnels caved in and the road has been tied up for five months, but it will be opened before the close of the month. Another railroad is to be built this fall, and we then expect quite a boom. We have an abundance of fine clays and other clays and shales close to our town that will make almost anything that can be made out of clay, and an abundance of fine coal.

E. E. JONES,
Yampa Valley Brick Company.

Colorado.

Arkansas News Notes.

Editor Clay-Worker:

Brick and clay products of the state of Arkansas have received favorable publicity all over the country as a result of a campaign put on sometime ago by the Arkansas Advancement Association, an organization for the purpose of exploiting Arkansas's resources.

Statistics gathered by this association have brought out a number of interesting facts concerning the products and possibilities of the state. Cinnamon stone, clay, kaolin, limestone, sandstone, shale and other minerals are found in the state.

Arkansas has an unusual variety of brick, pottery and fire clays. The famous Niloak pottery, with its many beautiful shales and colors, sold in art and jewelry shops all over the world, is manufactured from Saline county kaolin. Hot Springs county has large fire brick plants.

The state supplies manufacturing plants over the country, where excessive temperatures are produced, with fire brick. It is said that this clay will stand a test of 3,308 degrees without fusing.

A shale deposit in Crawford county is to be developed. It is said that the deposit has an average width of two miles. A company has been formed of Van Buren (Ark.) business men for the purpose of putting in a brick plant in the shale section.

A. B. Christopher of St. Louis has purchased an interest in the Southern Brick Company, Jonesboro, Ark. He has until recently been connected with the Evans & Howard Fire Brick Co.

The Rector Brick & Tile Co., Rector, Ark., W. C. Pratt and W. J. Huston, proprietors, reports a good business for the season.

A serious fire threatened the Barton Brick & Lumber Co., Jonesboro, Ark., a short time ago, but was extinguished before much damage was done. However, the loss was estimated at \$2,000, covered by insurance.

Several carloads of brick have been sent to Texarkana, Ark., from Murtreeboro, Ill., to be used in paving streets on the Texas side of Texarkana.

In awarding a contract for the erection of the new City Hospital at Little Rock, city officials ordered that brick made in Little Rock or in Arkansas be used in the building, providing the material and the prices be equal to those submitted by the Hydraulic Press Brick Company of Davenport, Iowa.

ARKANSAS TRAVELER.

Veteran Brick Man Offers Assistance.

Editor The Clay-Worker:

After reading some of the questions the readers of The Clay-Worker ask in regard to brick burning, it seems to me the trouble some of them have is due to the fact that every man who fires a kiln is not a brick burner. I run up against this all the time. I hired a man just yesterday who came to me as a burner, but in two or three hours' time I found out he was far from it. I have followed brickmaking most of my life and I know the game, and every man in charge of a plant should know it. If he does not, he can not tell a good burner from one who is not, and melts down the arches and gets soft brick on top. No man will do that who knows his business. In burning with oil or gas, the top of the kiln should not be covered with dirt, for that will kill the draft, and you must have draft.

I have spent twenty-two years in this part of the country making brick, and was at it in St. Louis and Kansas City before coming to the Pacific Coast. If I can do anything to help any brick man in trouble, I will be glad. Will be pleased to show any one out in this section the results I get with my burning, and be of assistance to any one in trouble with their burning.

With kindest regard to you and best wishes for the craft generally,

Very respectfully,

H. A. PYLES,
Kern County Brick Company.

California.

DEATH OF PIONEER BRICK MAN.

Isaac C. Wheeler, a pioneer brick manufacturer of Missouri, died at his home in Carthage, Mo., last month. Mr. Wheeler was seventy-eight years old and retired from active life a number of years ago. He started in the brick business in Carthage in 1881 and a little later purchased two other plants in the town, consolidating them all under one management, and operating them very successfully until about fifteen years ago. Later he organized the I. C. Wheeler Building Material & Fuel Company, which is now under the management of his sons Willis and Arthur. Mr. Wheeler had been active in the civic life of Carthage until a short time before his death. He is survived by two sons and one daughter.

Written for THE CLAY-WORKER.

CINCINNATI BRICK AND BUILDING NEWS.



ACTIVITY IN BUILDING has grown to such an extent in Cincinnati during the last month that there is a shortage of labor in all branches of the building trades. Supply men state that there is such a demand for brick that at least eight weeks are necessary to insure delivery. With the shortage of coal and cars as a result of the coal and railroad strike, the situation as regards the manufacture and delivery of brick and other material is getting critical. River transportation has been made use of by the Cincinnati Building Material Company in an effort to take care of the situation.

The supply of skilled labor is very low, due to the fact that there is an abnormal demand at this time and also to the fact that there have been few apprentices taken on to fill the places left vacant by skilled laborers for various reasons during the period of depression. The limited supply of skilled labor has resulted in increased cost to the builders, as contractors have been bidding against each other and offering higher wages than the established scale, in order to complete their jobs in scheduled time.

There has been a steady demand for brick of all kinds. The price per thousand of common brick, at the yards, has increased from \$10 to \$13 in June, to \$11.00 to \$13 in July. These prices are held down to a minimum of profit even though the demand is taxing the activity of the yards, due to the keen competition among manufacturers.

The large number of new buildings and improvements in the downtown district has taken the supply of labor away from the construction of residences, and as a result, the boom in house building has been slowed up.

The establishment of a clearing house for the renting and sale of apartments and houses is one of the novel features to be incorporated in the new department store Rollman & Sons Company are planning on the present site of their store at Fifth and Vine. The new structure will be twelve stories high, with a selling basement and a sub-basement beneath that. Its Vine and Fifth street fronts will be of stone and its side walls of buff brick.

The Evans Pipe Company, whose main office is in Cincinnati, is opening up ten new kilns in their sewer pipe plant at Uhrichsville, Ohio. This is necessary to take care of their growing business in sewer pipe.

Schedules in the bankruptcy of the Tri-State Tile and Coal Company of Ironton, Ohio, have been filed in the United States District Court by Joe B. Bibbee, trustee in bankruptcy. These schedules show liabilities of \$37,858.78 and assets totaling \$41,976.75.

CINCY.

MONTGOMERY ROTARIAN LAUDS BRICK COMPANY.

ONE OF MIKE JENKINS' fellow Rotarians (Mr. Black) of the Montgomery (Ala.) Rotary Club read an interesting paper on the Jenkins Brick Company's operations before the club at its last meeting in July.

He said in part: "To get the information for this paper, I visited, without Mike's knowledge, not only his plant and saw the North Montgomery pale mud converted into the famous Copperfield and Bluefield brick, but then I saw them put on a truck and carried out and placed in the outside walls of some of the largest and most modern and elegant homes now being built. In this connection it will probably interest you to know that there are now under construction, 264 new homes in the city of Montgomery. Many of these

are being constructed with the famous new Copperfield and Bluefield brick, used as face brick.

"This class of construction seems to be gaining in popularity all the while. The first house constructed of these brick was that of H. M. Meek, plant superintendent of the Jenkins Brick Company. The attractive appearance of this beautiful little bungalow on Fairview avenue started the general use of this artistic brick. These brick have been used in many of the finest homes built in our city and are going to be used in the walls of the Madison avenue side of Crampton Bowl and the attractive gate house is built with Copperfield brick. In fact, our own fastidious Tom Edwards is building a new home on South Hull street and is following the latest style of an up-to-date construction, using Copperfield brick.

"From a humble start in Wetumpka in 1906, with three bee-hive kilns, the Jenkins Brick Company has in the sixteen years that have elapsed grown into an organization that handles three large brick plants.

"The machinery used in the North Montgomery plant was invented by Mike's father, the late Rotarian, J. M. Jenkins, Sr., the founder of the company. The kilns at this plant are termed semi-continuous, consisting of fifteen chambers of a capacity of 100,000 brick each, or a total of 1,500,000. In its kiln the heat for burning the brick is peculiarly conserved; this is possible only because of the heat passing directly from one chamber to the next as the brick are burned. The other plant operated by this concern is known as No. 3 and was acquired from the Holt Brick Company in 1910. This plant has been converted into one of the most modern in the country and is equipped for the manufacture of not only brick, but building tile, drain tile and flue lining.

"The raw material for the manufacture of these brick is taken from pits on property owned by the company and brought to the plant in tram cars drawn by cables. Mike also owns his railroad equipment, engines and cars, for the mining of the material. Conveyance is directly to the large, electric driven mixers, where the clay is tested and automatically forced into the moulding machines. The plant is so arranged, and the belt conveyors and cutting machines so perfected, that the loss of time has been cut to a minimum.

"The Jenkins Brick Company manufactures common brick, dark-face brick, hollow building tile, drain tile and flue lining. This concern ships its products over the states of Alabama, Mississippi and Florida."

"The drain tile business is different from the other as it is done with farmers instead of contractors or builders. This product is marketed in large quantities in the western part of Alabama and Florida."

In closing his paper, Mr. Black said: "There is not another man who is doing more for Montgomery in building up the city industries and residential sections than is Mike, and he deserves the thanks of our community. The perfection of the so-called Copperfield and Bluefield brick has made it possible for home-builders here to construct beautiful residences at a relatively less cost than is possible in other comparable southern cities."

FIRE RISK IN TRANSPORTATION OF CHEMICALS.

At the Pittsburgh, Pa., experiment station of the Bureau of Mines, tests are being made to determine the fire risk of sodium nitrate, potassium nitrate, and ammonium nitrate in transportation and handling.

Good belting is so scarce and high in price that extra care should be taken to preserve and get the best service out of the belting you use.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,422,146. Building Block. William Tackenberg, Cincinnati, Ohio, patentee.

In building blocks, triangular lugs and depressions, on opposite sides thereof, said lugs and depressions being arranged to interlock between superimposed blocks to secure the same against displacement in all directions in horizontal planes, and the abutting surfaces of the lugs on one end of the block corresponding in disposition to the engaging surfaces of the depressions on the other end of the block, so as to necessitate breaking of joints between courses.

No. 1,422,551. Paving Brick and Roadway Constructed Therefrom. John D. Fletcher, Evansville, Ind., patentee.

In a roadway, a plurality of blocks having furrows formed longitudinally of their side of greatest dimension, a layer of sand beneath and forming a bed for the blocks, said blocks being spaced from each other, some of said blocks being arranged in parallel courses upon opposite sides of and to form curbs for the road bed each parallel course being spaced from the blocks forming the road and consisting of two layers of blocks, one above the other and in spaced relation, the upper surfaces of the lower layer of blocks extending approximately to the level of the sand forming the road-bed and thereby preventing it being washed away or otherwise dislodged, all of said spaces being adapted to receive a cementitious material whereby every block is spaced from every other block.

No. 1,422,258. Building Block. Harvey L. Emory, Worthington, Ind., patentee.

A building block having an interlocking surface, said surface including a projection at each corner thereof separated by spaces and a central projection of equal height with the other projections and positioned between said corner projection and at the intersection of the diagonals therebetween said central projection being receivable by two adjacent end spaces of two adjacent blocks of an adjacent tier when in wall formation.

No. 1,422,814. Building Brick and Wall Construction. Walter C. Bartlet, Thiensville, Wis., patentee.

A building unit comprising two integral members, the marginal edges of which conform in outline to the sides of an isosceles right-angle triangle.

No. 1,422,949. Brick. John E. Evans, Chicago, Ills., patentee.

A brick comprising a body portion, a flange on the inner edge of a side of said body portion, a recess formed in the inner edge of the opposite side of said body portion adapted to receive the aforementioned flange of a contiguous brick in a structure, a groove formed in the periphery of said body portion on one of said sides, a wedging tongue on the periphery of the opposite side adapted to be received in the aforementioned groove of a contiguous brick in a structure, said flange being provided with an opening to receive a nail or other fastening extending diagonally therethrough in the general direction of the side of said brick remote from said flange.

No. 1,423,117. Tile. Benjamin B. Infantino, New York, N. Y., patentee.

A tile having tongues approximately midway of its thickness along its top and one end edge, and grooves along the bottom and other edge, said tongues, each having a laterally extending portion constituting a filler lug having a portion arranged flush with the back face of the tile, each tongue

having an opening extending through the same and the filler lug for the insertion of a fastening device, and the rear walls of the grooves provided with notches adapted to snugly receive the filler lugs of contiguous tile.

No. 1,423,408. Gas-Fired Pottery Kiln. Arthur McD. Duckham, London, England, patentee.

A gas fired rectangular kiln for burning argillaceous ware, a gas bag therein constructed independently of the brickwork of the kiln proper, said gas bag dividing the kiln into a plurality of compartments, said bag having constricted apertures in the sides and top whereby heating gases escaping from the bag are evenly distributed and traverse the ware contained in the kiln between the bag and the walls of the kiln, the bulk of the gas passing through the ware in a horizontal direction.

No. 1,424,372. Super-Locking Hollow Tile. Otis V. Neese, Elo L. Neese and Earl C. Neese, Round Top, Tex., patentees.

As a new article of manufacture, a superlocking hollow tile block comprising a pair of equal size hollow sections, one section extending beyond one end and the side adjoining that end of the remaining section, said sections having interposed thickened walls for spacing said sections apart, and said walls extending and being reduced beyond the overlapping portions of the two sections, the reduced portions of said walls being integral with the opposite sections at opposite ends of the block, as set forth.

No. 1,424,560. Tunnel Kiln. Arthur McD. Duckham and Arthur R. Kent, London, England, patentees.

A tunnel kiln of the kind in which the gases have a horizontal path longitudinally of the tunnel, comprising trucks arranged so that the length of the truck is transverse to the length of the tunnel and baffle walls carried by the said trucks parallel to the length of the truck.

No. 1,424,719. Brick-Cleaning Machine. Samuel M. Funk, Long Beach, Cal., patentee.

A cleaning machine including conveyors alongside of one another, cleaning surfaces at opposite sides of one of said conveyors, an abutment element beyond said cleaning surfaces for guiding the articles to be cleaned onto the second of said conveyors and turning said articles over upon a cleaned side, and a second set of cleaning surfaces at opposite sides of said abutment element.

Trade-marks and Designs Patented.

No. 113,560. George S. Good Fire Brick Co., Patton, Pa. Trade-mark registered for name "Woodison-Steel" for fire bricks and paving blocks.

No. 156,046. John R. Root, Terre Haute, Ind. Trade-mark registered for brick for the wearing surface of road paving.

No. 156,591. Crescent Refractories Co., Curwensville, Pa. Trade-mark for name "Juniata-SL1" for fire brick and tile.

No. 156,591. Crescent Refractories Co., Clrwensville, Pa. Trade-mark registered for name "Juniata-SL2" for fire brick and tile manufactured from bre clay.

No. 159,138. Binney & Smith Co., East Orange, N. J. Trade-mark registered for name "Clayola" for modelling clay.

No. 165,713. Pacific Clay Products Co., Los Angeles, Cal. Trade-mark registered for name "Pacific" for glazed ware vessels and other articles.

The reason the clayworking industry has a special interest in the coal question is that aside from the railroads and the metal industry, this industry uses more coal than any other, the total requirements being around ten million tons a year.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and many of the other towns in southern Indiana were not quite as active as during the previous month, but there is still considerable building under construction and quite a lot more has been planned for the remainder of the season. There have been a good many homes built this season, in fact more than for several years past and many of the homes have been constructed of brick. Building operations during the last two weeks in July and the first two weeks in August were checked some by the delay of many shipments on the railroads. With the passing of the railroad strike it is expected that things will get normal once again and will move along all right. Brick manufacturers in Evansville and other cities report that they have had a very busy season and many more thousand brick have been manufactured in this section this year than last year. Some of the brick plants in southern Indiana have been operating steadily since the first of April.

One thing that is worrying the brick and tile manufacturers just now is the indication that coal will be high and scarce a little later on and at a price that some people may not be able to purchase it. When the coal mines in Indiana and other states in the North were closed down on April 1, as the result of the miners' strike, the union mines in western and northern Kentucky continued to operate for the reason that the contract the miners held with the operators did not expire for another year yet. Since then the Kentucky mines have continued to operate with two or three shifts a day and hundreds of carloads of coal have been shipped from that section daily into Chicago and the Northwest. But even with all the Kentucky mines in operation enough coal can not be produced to furnish the North after cold weather has set in. Manufacturers fear that unless the strike comes to an end by the middle of September, there will be actual shortage of coal a little later on and that the price will go skyward. Up to the first of August the manufacturing plants in southern Indiana felt the effects of the coal strike little if any at all. But with the near approach of fall and winter it is apparent that there is going to be a scramble to get coal a little later on and some manufacturing plants will be lucky to get enough coal to keep them in operation, providing of course that the coal mines of the northern states do not start operating again.

Henry C. Kleymeyer, president and general manager of the Standard Brick Manufacturing Company and president of the Evansville Chamber of Commerce, has secured a long option on a strip of land on the river front at Evansville and his idea is to hold the land for the city in the hope that a municipal terminal may be built a little later on. There has been considerable agitation at Evansville for the past year for a municipal terminal and it is said the Federal government is willing to aid in an enterprise of this kind.

Leslie Lacroix, traffic manager of the Evansville Chamber of Commerce, is taking up with the railroads the readjustment of brick rates from Evansville to points in the central territory, which includes Indiana, Illinois and Ohio, for the purpose of securing a reduction from the present rates and an equalization of rates with the other brick centers in the territory named. As an example of the reduction being requested, the present brick rate from Evansville to Cincinnati is \$2.50 per net ton, and a reduction to \$2.40 per net ton is being asked. This reduction is in accordance with

the recommendation of the Interstate Commerce Commission that the railroads readjust the rates in the central territory.

L. A. Folsom, brick manufacturer of Boonville, is secretary of the big Boonville fair to be held the last week in August and the first week in September. C. C. Landgrebe, brick manufacturer at Huntingburg is the secretary of the Dubois County fair, that was held at Huntingburg from August 7 to 12.

Potteries at Evansville have been operating on steady time for some time past, but their shipments late in July and early in August were delayed greatly because of the railroad strike.

Aaron M. Weil, head of one of the largest potteries at Evansville, accompanied by his wife, is spending the balance of the summer at Atlantic City, N. J.

Frank Reed, well-known brick manufacturer at Mt. Carmel, Ill., was a business visitor a few days ago at Evansville and reports a fair amount of business this year in his territory.

A. HOOSIER.

FOURTH BIG MONTH OF CONSTRUCTION ACTIVITY.

July was the fourth consecutive month of unprecedented building activity according to the F. W. Dodge Company. Contracts awarded during the month in the 27 northeastern states amounted to \$350,081,000. This was a 2 per cent increase over June and a 65 per cent increase over July, 1921. It is greater than any previous monthly total except the record figures of April and May of this year. The July increase was in central western territory, eastern districts having shown slight declines.

The July figures brought the total for the first seven months of this year up to \$2,041,065,000, an unprecedented figure, 60 per cent greater than that for the corresponding period of 1921.

July showed a levelling tendency not only as between localities, but as between classes of construction. There was a decline in the volume of residential construction from June, which was more than equalized by increases in industrial and public works construction. The figure for industrial plants, \$31,882,000, which was 9 per cent of the month's total, was the largest for this class since November, 1920. Residential construction, however, still maintains the lead amounted to \$108,951,000 in July, 31 per cent of the month's total. Public works and utilities amounted to \$79,162,000, or 23 per cent of the total; business buildings, \$44,020,000, or 13 per cent of the total; educational buildings, \$40,000,000, or 12 per cent of the total.

Contemplated new work reported during the month amounted to \$508,222,000, compared with \$350,081,000 for contracts awarded.

SEWER PIPE AND TILE MANUFACTURERS TO MEET IN LOUISVILLE.

The semi-annual national convention of the National Clay Products Association will be held at the Hotel Henry Watterson, Louisville, Ky., September 4 and 5, according to an announcement made by the Louisville Convention and Publicity League. The Association held its convention there in May, and members were so well entertained that they wish to meet there again. George C. D. Lenth, secretary of the Association, is in charge of arrangements. The convention will attract between 100 and 150 manufacturers of tile and sewer pipes to the city.

The paint bill of the country this year, which will perhaps total up to the biggest on record, is another reminder that it pays to build with brick.

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.

NEW JERSEY is still showing gains that are worthy of note. The greater part of the major building centers are reporting anywhere from seventy-five to one hundred per cent gains in totals, as compared with a year ago.

The activity that has been felt in Manhattan is in many ways reflected throughout this state. While there has been a large quantity of residential work in progress, there has been a slight leaning toward industrial construction. This has been brought about in several ways. Increased manufacturing requirements have almost forced many industries to do some very necessary expansion, and the completion of some of the residential programs produced men in sufficient quantities, so that any project started now, would be carried to completion.

The coal strike and the railroad tangle have in some measure curtailed production, but only in the way that each is affiliated with the manufacture of burnt clay products. The difficulty experienced by some at the beginning of the coal strike has in some measure been alleviated and production is going on. Transportation, on the other hand, is not retarding the deliveries, as the motor truck is the sustaining factor. In many cases this is the quicker method of dispatch, as but one loading is necessary and a truck equipped with a dump back requires but one man to unload.

Taking the situation as a whole, manufacturers are producing very close to full capacity, with the distributors of building products reporting an increased volume of business. This action on the part of business, is absorbing the accrued stocks faster than they can be kept up. This would give a very good insight into what is going on in various parts of this state. All distributors are not being pushed quite so hard. There are a few that are doing just a nice comfortable business, with their stocks holding out in good shape.

Prices, as a whole, remain firm at former levels. No large drop is, or can be, reported. The price in the northern part of the state remains close to \$20.00, with now and then a quotation showing a dollar or so less. Even though some yards must deliver "hot brick," the price does not change, and the shortage of fuel has made but very little difference. The main disturbing feature is the lack of laying in a reserve for future requirements. In the central part of the state the requirements seem to be amply covered, as in other parts, with the price doing very good at its old levels. On the southern part it can be reported, as in the northern section. Face brick is quoted at around its former level, with little or no change in price. The quantity and the method of delivery are the main features determining the price. The former is governed by the amount of material on hand at the yard; the latter depends somewhat on the railroad and whether a motor truck makes deliveries. BURTON.

AUSTRALIAN BRICKMAKER ON A TOUR OF INSPECTION.

E. R. Lanceley, Garden Road, Gore Hill, Crow Nest, Sydney, New South Wales, one of the largest brick manufacturers of Australia, spent a week recently with F. W. Dennis, the kiln builder of Norfolk, Va. Mr. Lanceley and his wife are making a trip around the world, and left New York August 12 for England. After a stay of some weeks in his native country, Mr. Lanceley will return to Australia by the way of the African coast. He has three brickyards in Sydney, and his sons look after the business while he is away.

THE BRICK SITUATION ON THE HUDSON.

ACCORDING TO THE weekly bulletin of the Dow Service of New York City, current orders, coupled with common brick requirements for this year, already indicate a production of one billion brick in the Hudson river manufacturing district alone for this year, in spite of the difficulty of getting coal and wood. The record is 1,200,000,000 for a single year.

Changing from Coal to Oil.

Brick manufacturers are watching with great interest the experiment in quickly changing the Carey Brick Company's plant, near Albany, from a coal burning to an oil burning plant, as a means of circumventing the coal shortage now acutely felt all along the river. This operation follows experiments made some time ago by the Garner Brick Company, but the significant thing about the latest change is that it is staged as a race between the settlement of the rail and fuel strikes and the burning of brick by oil, shipping and marketing it in New York while the excessive demand continues.

Fuel Situation Acute.

Other plants are operating by burning what little coal they can get and wood. But wood is as hard to get as coal is. Even then it cannot be used except at great expense of practically rebuilding the fire chamber. So, in the absence of both coal and wood, the brick are set in the kiln and stay there until coal can be obtained. This is typical of many Hudson river plants today. If the kiln is set for burning wood, it is impossible to obtain it except at a price which is sometimes more excessive than coal at the present price. Wood required for burning brick must season for a year. Cordwood cut last autumn, for example, could not be economically used for burning green brick now awaiting burning in the kilns. Wood burning for brick manufacture has not been used for so long that the cordwood cutting industry for brick burning has become an abandoned industry in brick-making regions. Also the sources of wood supply are now at greater distances from the plants than when wood burning of brick was the vogue in the Hudson river district.

INFORMATION WANTED IN REGARD TO FELDSPAR.

Editor The Clay-Worker:

So many years have passed since we met and since I ceased to be a brickmaker and subscriber to The Clay-Worker that I doubt if you will recall me to mind. For many years I was a member of the Fulcher & Dyas Brick Company of Nashville, Tenn.

Am writing to ask if you will be kind enough to give me a little information. I want to get in touch with the buyers of feldspar, as I am interested in a very large deposit in this state of North Carolina. I hear that there is an association of spar buyers, and I wish to get in touch with their president or secretary. Can you give me names and addresses?

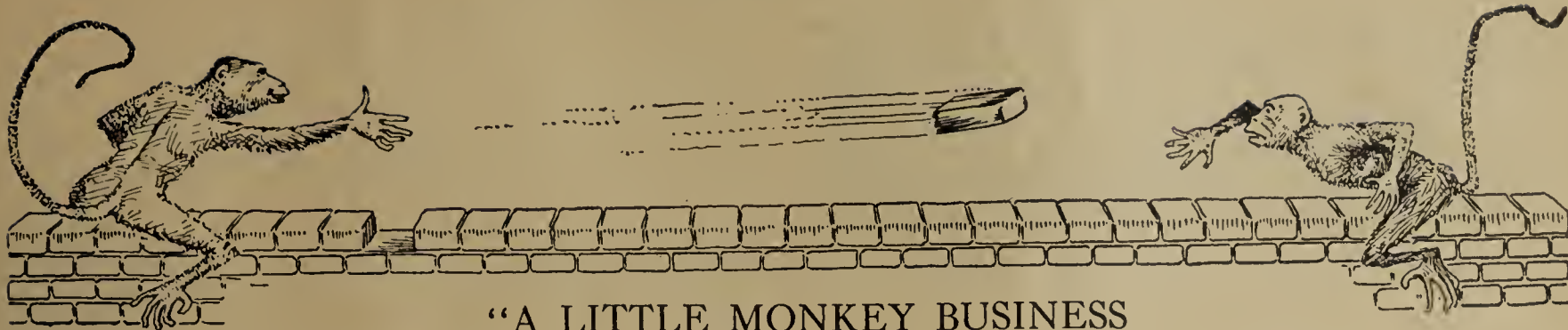
Wish also the name of the secretary of the National Ceramic Association, a directory of the manufacturers using spar in the East. Liverpool and Trenton districts. I have no doubt there is such a directory.

Is Professor Edward Orton still connected with the University of Ohio, at Columbus? And what is the address of my old friend, W. D. Gates—and is he still writing "Button Hole Talks"?

I trust that the passing years have been kind to you and yours, and that The Clay-Worker continues to flourish.

I will greatly appreciate as much of the above information as you can conveniently give me. Yours very truly,
Asheville, N. C. ROBERT DYAS.

August 10, 1922.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

FAR-AWAY JOBS.

Mrs. Knicker: "Do you look for work?"

Weary Willie: "No, mum; me method is to listen in for it."—"New York Herald."

COULD PUT UP WITH HIMSELF.

"I don't see where we can put that lecturer up for the night."

"Don't worry. He always brings his own bunk."

THE DESIRE FOR CHANGE.

Father: "I don't know what is the matter with that child. He won't stay in the same place any length of time."

Mother: "He probably got it from his nurses."—"Le Journal Amusant" (Paris).

DOUBLE PLAY.

Twins having arrived, the father told little Peter that he needn't go to school that day.

Little Peter: "But wouldn't it be just as good to tell teacher tomorrow I've got one new little brother, and next week stay home and then tell her I've got one more?"

CARTE BLANCHE.

Doctor: "I would advise you, madam, to take frequent baths, plenty of fresh air, and dress in cool gowns."

Husband (an hour later): "What did the doctor say?"

Wife: "He said I ought to go to a watering place, and afterwards to the country. Also, I must get some new light gowns at once."—"Tit-Bits" (London).

A BUSY EXECUTIVE.

Accountant (to office manager): "Have you a great deal to do here?"

Manager: "Well, I should say so. What little work there is I have to distribute among twenty people—that's no easy task."—Exchange.

WHAT HE COULD DO.

"Now," said the physician to the distinguished poet who had summoned him, "you are not in good shape and I must absolutely forbid all brain work."

"But, Doctor," protested the poet, "may I not write some verses?"

The doctor laughed. "Sure," he said, "write all the verses you want to."

NOT TOO LADYLIKE.

The best story of the Westerner's deference to women, writes a correspondent, is concerned with the conclusion of a little fight with Indians. The latter got the best of it, and the squaws arrived with stone hammers to finish off the wounded. As a squaw thus armed was approaching a half-

conscious victim, his friend called out to him: "Look out, Bill, there's a lady coming."—"London Morning Post."

GAVE HIMSELF AWAY.

Hubby: "I went to a stag party last night, dearie."

Dearie: "Yes, I heard you staggering as you came in."—"Burnt Log."

AGE OF FRANKNESS.

Ted: "The flappers protest that they are misunderstood. They claim that they're not brainless creatures."

Ned: "Don't you believe it, my boy. If a flapper had a brain she'd show it."—"New York Sun."

STOP!

Well! What are you stopping for?" asked the young man, as the taxi came to a halt in the middle of the block.

"I heard the lady say 'Stop'," said the taxi driver.

"Well, she wasn't talking to you, was she?"—"Kreolite News."

THESE MODERN DANCES.

Flapper: "No, I can't waltz this one with you, I'm too danced out."

Gallant Stude: "Naw! Y'ain't so damned stout, you're just nice and plump."

AMERICAN INGENUITY.

'Arry 'Awkins (just over): "Ow is it the sky is so much clearer in New York than hit is in Lunnon?"

Night Hawk: "Oh, we have sky scrapers in New York."—"Gargoyle."

THE REWARDS OF PUNISHMENT.

"Doctor," called the small boy, "come up to our house quick!"

"Who is sick at your house?" asked the doctor.

"Everybody but me. I'd been naughty, so they wouldn't give me any of the nice mushrooms pa picked in the woods."

A BRIDE'S PUZZLING ORDER.

An absent-minded bride, anxious not to forget to order two chickens for dinner, repeated to herself while clearing away the breakfast things: "Grocer—chickens—grocer—chickens."

The words became confused in her mind, so that when she went to the telephone she asked: "Have you any nice young grocers?"

"Why—why—yes," replied an astonished voice at the other end of the wire.

"Well," said the bride, "send me two, dressed."

"Dressed?" said the voice, more astonished than before.

"Why, no," answered the bride, "I believe you may send them undressed. If my husband comes home early he will wring their necks and the cook can dress them."



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ADVERTISING RATES

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CURRENT COMMENT.

More work and less play makes more "jack" any day.

* * *

The best thing about the building boom is it calls for more brick.

* * *

Though a dollar may not go as far as it used to, it is just about as hard to find and bring back.

* * *

We get action if we keep yelling for it, then along comes reaction which just naturally follows after action.

* * *

The "Atlanta Constitution" says, "You can't put new wine in old bottles, but you can put an old Beveridge in a New seat."

* * *

So far no prediction that this country is going to the eternal bow-wows has ever come true—and here's hoping it never will.

* * *

One kind of prohibition law that many of us would be in favor of is a law to prohibit strikes—one that really will prohibit them.

* * *

If enough of our people just keep touring in Europe they will soon restore that financial balance and relieve the money shortage over there.

* * *

It is almost a foregone conclusion that we will have car shortage and transportation troubles this fall; we generally do, and the rail strike this year will likely aggravate the situation and make fall deliveries uncertain. So be a bit careful about making promises of future shipment.

And we can now turn from daylight saving to questions of coal saving.

* * *

The main trouble with the vacation is having to go back to work after it is over.

* * *

When we drop the "I" out of driv~~el~~ we have a much better word, for it then becomes drive.

* * *

There is some consolation in the fact that neither capital nor labor is as bad as the opposition paints it.

* * *

The hollow building tile market ought to be looking better and feeling friskier now than it was early last spring.

* * *

The fact that it costs more to build now than it used to is one of the good arguments in favor of brick and permanent building.

* * *

Time and a half for overtime work is not a reward for merit, but a penalty on employment that should never have been imposed.

* * *

While the trend of farm crop values is toward lower levels, farmers as a whole are in better shape now than they were this time last year.

* * *

One big field of opportunities for cost saving in clayworking is in reducing handling cost through the use of modern methods and power devices.

* * *

If building operations keep up their present gait until cold weather, many of the brick plants of the country can keep running all the winter.

* * *

One of the blessings of peace is that it leaves us free to enjoy our own family scraps and these set-tos between labor and capital that we call strikes.

* * *

If some one should ask you for a short, concise explanation of the difference between a common brick and a face brick, what would your answer be?

THE FIRST SIX MONTHS.

Figures are now available which indicate that the first six months of 1922 have broken all previous records in the amount and value of building done. There was more done during the six months than was done in any whole year in prewar days, and the total is considerably above the high water marks of 1920 and 1921. If the second half of the year makes a showing any way comparable with the first six months the year as a whole will go down in history as a record year in building operations, with a total running into billions. It is a year, too, in which both brick and hollow building tile have so far been making splendid progress and gaining headway, especially in home building. This ought to lend encouragement to further effort and pave the way to still greater progress in the future in the percentage of brick and hollow tile used in building operations.

WHEN THERE ARE TOO MANY.

We are being reminded in several ways now that when there are too many people in any given industry or business it increases the cost to consumers of their products. This it is claimed is one reason for the high cost of distribution of commodities. There are too many retail dealers. It is the

official explanation of why coal costs are periodically high, there are too many mines and too many miners, and they must have their living and their profit, even though they work only half time, and the public must pay the bill. Naturally, then, when there are too many brickmakers or other clayworkers, the industry where this happens to become burdensome, both to those in the industry and to the public which has to buy its products. Fortunately for the clay industry as a whole, while it may get overdone in some sections, the call for its products is increasing year after year, so that reasonable expansion, if it is properly distributed, is not likely to create any surplus of production. In a word, the best answer to this problem in the clayworking industry is to work diligently in developing the great field of possibilities for expansion in the use of clay products.

TOO MUCH ORGANIZING.

One point brought out strongly by several people making talks at the organization meeting of the American Construction Council was that we are organization mad. We have so many organizations which the average man is invited to participate in that it is becoming burdensome in both time and money. There will of necessity in the future be more new organizations and better organizations, but we are evidently also due for a house cleaning in which there will be a ridding of business and industry of organizations which are not important enough in their purposes and functions to justify their existence. The time has come for standardization and simplification in organization work as well as in other lines, and for a house cleaning that will reduce the number and increase the effective usefulness of trade and business associations.

ESTIMATING THE YEAR'S NEEDS.

In lumber circles there is an effort now to stabilize the market by following what is called the budget idea; that is, of all retail dealers estimating the probable needs for the season or year and budgeting these in advance taking as the basis past sales records.

There is no doubt but what some idea of this kind would prove good for the clayworking industry. When either individual plant managers or the industry as a whole can estimate from a careful survey of the situation the probable needs during the year, then they can prepare and act accordingly and thus keep the industry free from periods of overproduction and other periods of under supply.

It is not entirely simple nor is it a very easy thing to do, but there is room to do some good work here, which ought to be done. Each man can make a logical survey of his trade prospects during the year, using his past year's record as a guiding light that will help stabilize the industry and keep it free from high peaks and low sags.

CAN WE AGREE ON A COST MINIMUM?

Nelson B. Gaskill, chairman of the Federal Trade Commission, is quoted as saying that he believes selling below cost is an unfair method of competition and that the group agreement not to practice this method of doing business is a lawful agreement. It is, he thinks, a matter for concern and action in trade associations, just the same as standardizing of sizes, proper branding, and agreement against bribery.

This really sounds too good to be true. It reminds us that occasionally some member of the Federal Trade Commission holds out encouraging prospects for industry in the

matter of cost accounting and getting together on an intelligent competitive basis. But the history of the past shows that when industry undertakes to follow these leads it too often meets trouble in the form of prosecution.

If they would just give that Federal Trade Commission real authority to say these things and make them stand, then the way would be clear for manufacturers to get together with cost figures and come to some agreement to use these as a basis below which products will not be sold. When we once get a foundation of this kind the way will be paved for getting a fair profit out of business regularly instead of periodically.

THE PROFIT SHOWING.

One of the good signs of the times is in that the business balance is now showing on the right side of the ledger. Many red ink bottles with which balances were marked up last year on the wrong side are now being dispensed with and the balance is being written on the profit side. It is not boom times yet, and many firms are still having a hard time to make ends meet, but the half year showing according to figures available, brings an increase in the number of concerns paying dividends—a showing that compares well with a ten year average. So we are on our feet again as a country in a business way, and the profit showing ought to do some growing between now and the end of the year.

SHODDY CONSTRUCTION.

Some notes of warning are being heard in the building world today against shoddy construction. We always have with us a few of the unscrupulous who build cheap and flimsy houses that they may reap a larger profit, but the present condition of high cost in building makes an unusual temptation to seek for ways to beat the game and reduce the first cost. The doctrine of the brick and tile people is founded on the theory of better building. So all of those in the industry should be actively opposed to shoddy construction. Let us preach the doctrine of good building—not cheap—and it will be better for the builders as well as for the clayworking industry. Building codes and ordinances help point the way to proper building, and to avoidance of the shoddy. With these things as a guide, and with this best building material on earth back of him, every clayworker should be an active booster in his community for the kind of building which, thought it may cost a bit more at first, is cheaper in the long run than shoddy building, and much more satisfactory to the one who builds.

COAL UNION DESIRES.

Back of our present coal troubles are some desires of union leaders which are unreasonable. One is that they may have a wage rate high enough that even at half time work they will fare well, as well as the rest of us working full time. The other is that national agreement with the Check Off, the thing which means that employers of miners must deduct union dues from wages, thus making a forced payment of dues, and practically an enforced membership in the union. Figures are not made available to show how much money the union leaders collect in this way. One estimate by the Coal Committee of the Chamber of Commerce of the United States, indicates \$15,000,000 a year. It is claimed that nearly half of this is paid to check weighmen employed by the unions to verify weights on coal paid for by the ton. That's quite a price to pay for such verification, and even granting it, there still remains an annual total that is around the

seven million mark—quite a lot of money to collect forcibly from workmen through an arrangement by which their employers deduct it from wages and send checks direct to union headquarters. The miners contend that this check off is a legitimate means of collecting dues and is based on long practice which originated in England. Somehow we had a feeling that there was nothing American in the originating of that practice.

A CORRECTION.

A typographical error occurred in Mr. Richardson's Convention Comments in the July issue of *The Clay-Worker*; there was an omission in the last line of the second column on page 42, which should read: "that he would get from continuous kiln, not even if he has the kilns connected by underground ducts," * * *

MAYER, OF BRIDGEVILLE, GOES ABROAD.

C. P. Mayer, the well-known paving brick manufacturer of Bridgeville, Pa., is planning to leave for Europe on a semi-business and pleasure trip. He will probably include Holland in his itinerary and promises to tell the next N. B. M. A. convention something about the wonderful brick-paved roadways of that country.

THE GOVERNOR SAID IT.

Governor Warren T. McCray, of Indiana, is quoted as having said to counsel for the union miners in Indiana: "I have absolutely no respect for any union or any member of a union who holds that because they do not want to work for any reason whatsoever, that no one else may be permitted to take their jobs. I feel such a condition should not be tolerated in free America. It is perfectly proper for any person to quit if not satisfied. The same right to work should be accorded the individual who wants to work. It is in defense of this principle that I have given consideration to the calling out of troops." That is the kind of talk we need more of today, and it should be backed by action, and supported by the public.

FROM CLEVELAND TO CHATTANOOGA.

Maurice B. Greenough, secretary of the National Paving Brick Manufacturers' Association, Cleveland, Ohio, has tendered his resignation, effective on or about January 1, 1923. He will become associated with the Southern Clay Manufacturing Company, Chattanooga, Tenn., of which Mr. W. M. Lasley is manager. This company is the leading paving brick firm in the South, and is also interested in the contracting business. Mr. Greenough's resignation has been accepted by the board, and a committee, consisting of O. W. Renkert, C. C. Barr, Spencer M. Duty and Will P. Blair, was appointed to recommend Mr. Greenough's successor to the Board of Governors at an early date.

A NEW MEMBER OF THE N. B. M. A. OFFICIAL FAMILY.

The many friends of "Marse" John W. Sibley, the treasurer of the N. B. M. A., will rejoice to know that great happiness is in store for him. He is to wed Mrs. Florence E. Varun of Birmingham, September 5. Following the ceremony, Mr. and Mrs. Sibley will journey to the Pacific Coast, via Yellowstone Park, thence on to Seattle, Portland, San Francisco and Los Angeles, returning by way of Denver, visiting the Grand Canyon and other points of interest. It is a very happy event, the addition of a new member to the official family of the N. B. M. A.

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CURRENT NEWS NOTES.

The Redford Brick Company, Richmond, Va., drying their brick in the open air, contemplate installing a drying system of some sort in the fall.

The Milton Press Brick Company, of Milton, Ontario, Canada, will spend \$10,000 improving their plant, including kiln repairs, etc.

The brickmaking plant of Porath Bros., Detroit, Mich., which was recently destroyed by fire at a loss of \$50,000, will be rebuilt at once.

A number of changes have been made in the office force of the National Paving Brick Manufacturers' Association at Cleveland. Stanley A. Knisely, economist, has been promoted to the office of assistant secretary, and Miss B. L. Beller, bookkeeper and office manager, has been promoted to the office of assistant treasurer.

Equipment Wanted for Fire Brick Plant.

Editor *The Clay-Worker*:

The writer is interested in a fire brick plant near Baltimore, Md., and is seeking information in regard to prices and economical service of crushers, dryers and clay screens. We now have five down-draft kilns and are planning to increase the plant.

Yours respectfully,

ADDISON H. CLARKE,
717 Newington Ave.

Baltimore.



THE BRADFORD BRICK CO.



American No. 290 Augur Machine

The Bradford Brick & Tile Co. is one of the best and most carefully operated plants in the world. They make the famous Bradford Brick.

When the plant was remodeled they bought Four American No. 290 Augur brick machines.

Three of these machines were put into operation and the fourth was kept ready for an emergency if anything went wrong.

In several years of continuous operation at capacity *"nothing has gone wrong"* with any of the 290 machines and Mr. Hanley, of the Bradford Co., says he thinks he *"might as well sell that extra emergency machine."*

The Three No. 290 machines are handling all the clay delivered to them without trouble or delay.

The Bradford plant is also using three of the American 384 Grinders and three of the American No. 302 Pug Mills.

THE HADFIELD-PENFIELD STEEL CO. BUCYRUS, OHIO

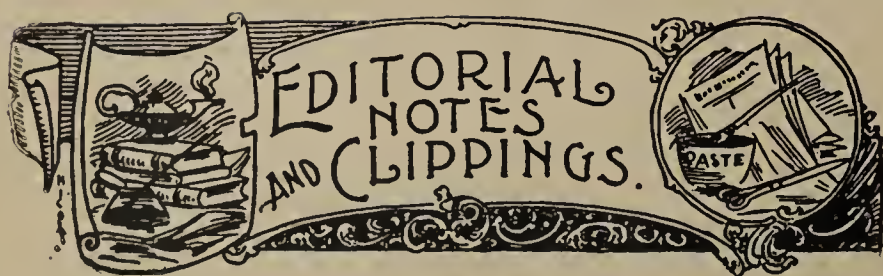
Formerly The American Clay Mchy. Co.

Bradford, Pa., June 22.

The above ad is in accordance with the facts. Would be glad to have you use our name in this connection.

THE BRADFORD BRICK CO.

Mention THE CLAY-WORKER.



The Kittanning Grey Brick Co., has been incorporated at Wilmington, Del., with \$100,000 capital stock.

George W. Bowers of Mannington, W. Va., is promoting a plan for the establishment of a pottery at Grafton, W. Va.

J. H. Hansel has become interested in the organization of a company for the manufacture of brick at Van Buren, Ark.

The Diamond Brick & Tile Co. of Cleveland, Ohio, has certified to an increase in its capital stock from \$50,000 to \$100,000.

The Concocheague Brick Co. of Hagerstown, Md., will improve its plant by the construction of three kilns and a mill at a cost of \$35,000.

The Stonecreek Brick Company, with a modern plant, has begun operations at Stonecreek, Ohio. The plant has a daily capacity of 50,000 brick.

The brick plant of Hidden Brothers at Vancouver, Wash., is being run to full capacity, the brick being shipped to Portland, Ore., and other near by points.

The Houston Brick & Supply Company is a new concern which has just opened headquarters at Houston, Texas. G. F. Schmidt is at the head of the concern.

The Clayton Brick & Tile Co., with plant at Clayton, Iowa, has opened offices at Dubuque, Iowa. The company is enjoying a good business, shipping brick to many Iowa towns.

The Sioux Falls (Iowa) Pressed Brick Co. has been incorporated by Victor E. and Amanda W. Olsen and George A. Edmunds of Sioux City. The company is capitalized at \$50,000.

The Chamber of Commerce of Robstown, Texas, is interested in the establishment of a brickmaking plant at that place, and will be glad to hear from parties interested in such a venture.

The Melchers Fullers Earth Company has been incorporated at San Antonio, Tex., for \$100,000 for the manufacture of Fullers earth. The incorporators are F. J. Dykstra, L. L. Shropshire and E. G. Potter.

The New Brick and Tile Co., Moreland Building, at Easton, Md., is having plans prepared for the erection of a one-story plant at a cost of \$50,000. C. Fletcher Clarke is secretary of

the company. The company will manufacture brick and tile.

The Canton Brick and Fire Proofing Company will erect a \$250,000 brick plant east of Newcomerstown, Ohio, on the Pennsylvania railroad.

The Guidry Brick Co., of Lafayette, Ala., will make additions to their plant with a view of doubling the capacity. Alexander Guidry is president of the company.

The Falls City Hydraulic Brick Co. of New Albany, Ind., which was incorporated three years ago, but which never started work at its plant, commenced operations the first of the month.

The Standard Refractories Co., at Claysburg, Pa., has been merged with the General Refractories Co. of Sproul, Pa. Both concerns manufacture fire brick used extensively by steel and other plants.

The plant of the Prineville Brick Company at Prineville, Ore., was started up last month for the first time in a number of years. W. F. Hardin is manager of the plant, which will be operated regularly the rest of the year.

The plant of the Zeeland Brick Co., at Zeeland, Mich., was badly damaged by fire last month. The loss on which there was no insurance is estimated at \$5,000. The company is operating under a receiver who was appointed last fall.

The Central Clay Works of Albert Lea, Minn., were entirely destroyed by fire recently, all the buildings except the office being burned down and the machinery turned into junk. The loss is estimated at \$50,000 to \$75,000. It is believed the fire was set by a tramp.

The Texas Chinaware & Novelty Pottery Company has been incorporated at Dallas, Tex., with a capital of \$50,000 and with H. G. Stern as president. The company will establish a plant on Bettison Circle in Oak Cliff and expects to have an annual output of \$300,000 worth of pottery.

The Ashtabula, Ohio, plant of the Burton-Townsend Co., with headquarters at Zanesville, Ohio, is being operated to full capacity. They now have orders on their books aggregating nearly fifty car loads of brick, including brick for new high schools at Conneaut, and Wickliffe, Ohio, and a big job for Buffalo.

The first factory building of the Noll Brick and Tile Co., Wichita, Kans., has been completed and all machinery, costing \$80,000, has been secured and is being installed. The company expects to be producing 25,000 bricks daily starting September 1. The new building is 30x75 feet and 41 feet high and will grind and screen 700 tons of brick shale a day. When the plant is complete it will manufacture 250,000 brick a day in addition to tile products. The company will make

(Continued on page 178.)

"TECKTONIUS" KILN BAND FASTENER

3 to 10 inch in width



The Rivetless Fastener With the Bulldog Grip

Complete Iron Equipment

for continuous and Door Frame Bands or Plates.

Crown Ventilators

Crown Covers

Dampers

Grate Bars

Grate Frames

BANDS and PLATES

Span Rods

Wall Plates

Turnbuckles

Angle Irons

Angle Fasteners

DOOR FRAMES

GOING TO BUILD OR REMODEL

A KILN? Write for Prices.

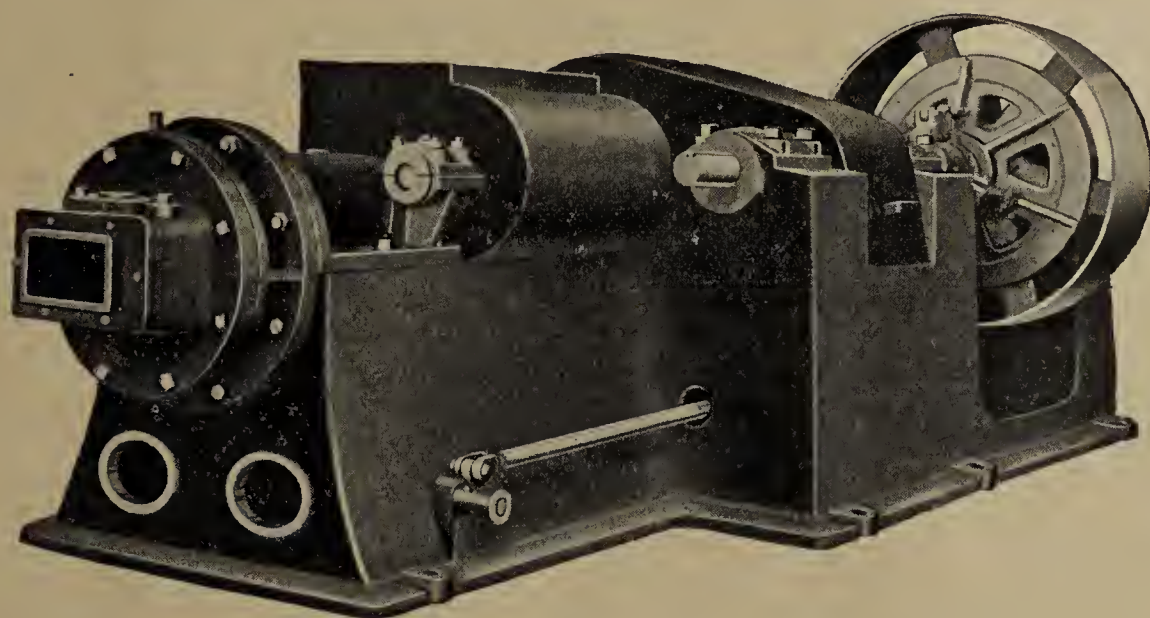
E. C. TECKTONIUS MFG. CO.

Racine, Wisconsin

425 - 435 - 445

AUGER MACHINES

PATENTED



Kushequa (Pa.) Brick Co.
and

Kushequa (Pa.) Ceramic Co.

have just installed **two** 435 auger machines for Brick and floor tile. Mr. Kane writes,

“The No. 435 machine surely can put the tile across when it has the dust to work with. Our main trouble is to keep anything like enough dust to supply it.”

Ask for Bulletin 30.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

(Continued from page 176.)

dry press and stiff mud bricks. W. R. Covert is manager of the plant.

Fire which started in the gas producer caused \$20,000 damage at the plant of the Windsor Brick Co., Akron, Ohio, recently.

D. S. Hoover, of New York City, was recently appointed acting president and general manager of the Shawmut Clay Manufacturing Co., at Shawmut, Pa.

The United States Refractories Brick Co. is enlarging its plant at San Luis Obispo, Calif. The company is very busy filling the demand for fire brick.

The Hoytville (Ohio) Clay Company is making quite a number of repairs at the plant, including the installation of a new oil engine, and the erection of a new kiln stack.

The Champlain Brick Company of Mechanicsville, N. Y., which is building another up-to-date brick plant of 100,000 daily capacity, will build an immense Standard Dry Kiln Company dryer, the same as they are now using at the old plant.

M. E. Gregory, the controlling spirit of the Brick, Terra Cotta & Tile Co. of Corning, N. Y., writes they are very busy, with plenty of orders on their books. The plant is being enlarged.

The plant of the Sapulpa Brick Company at Sapulpa, Okla., was almost completely destroyed by fire last month. The flames started in the machinery room and had gained great headway before the fire department arrived. W. H. Powell, president of the company, estimates the loss at \$50,000.

The Celite Products Company of Maine, with capital of \$50,000, has been incorporated in Missouri with a capital of \$2,500 and will have headquarters in St. Louis. The firm will sell Diatomaceous earth and other products. The incorporators are C. L. Andrews, D. A. Leland and W. T. Gardiner.

The firm of Williams & King of Springfield, is planning to establish a brick yard in Mountain Grove, Mo. Several proposed sites for the plant were inspected this month by representatives of the firm. One site is in the vicinity of Bald Knob and is especially adapted for the plant because of the clay structure.

George A. Parry of the Parry Brick Company, Boston, Mass., writes that the brick business is very good in the East, and the Parry Company is having hard work to fill orders. Common brick are being quoted at from \$20 to \$22 per thousand. While they are experiencing a shortage in

fuel, Mr. Parry shares the common wish that the coal situation will be righted ere long.

J. H. Hansel of Ozark, Ark., is organizing a company to build a plant at that place for the manufacture of brick and other clay products.

The plant of the Bessemer Fire Brick Company at Birmingham, Ala., has been sold to Mr. Callaghan, who will operate same to capacity.

The plant of the Medina Clay Products Company at Chipewa Lake, Ohio, which was destroyed by fire recently, will be rebuilt at once. Bert L. Cassady will be manager of the plant.

The Sydenham Brick & Tile Co., Ltd., of Wallaceburg, Ontario, Canada, will build an addition to its plant, on which they will spend approximately \$30,000. E. C. Morse is general manager.

Following the purchase recently of the Pennsylvania Fire Brick Company at Beech Creek by the General Refractories Companies, the plant, all franchised rights of the Hayes Run Fire Brick Company at Orviston, will also be taken over by the same company.

A new company has been formed under the name of the Oregon Face Brick Co., which has taken over the brickmaking plant at Willamina, Ore. The plant which has been idle four years has been put in good shape and the company is proud of the product being turned out.

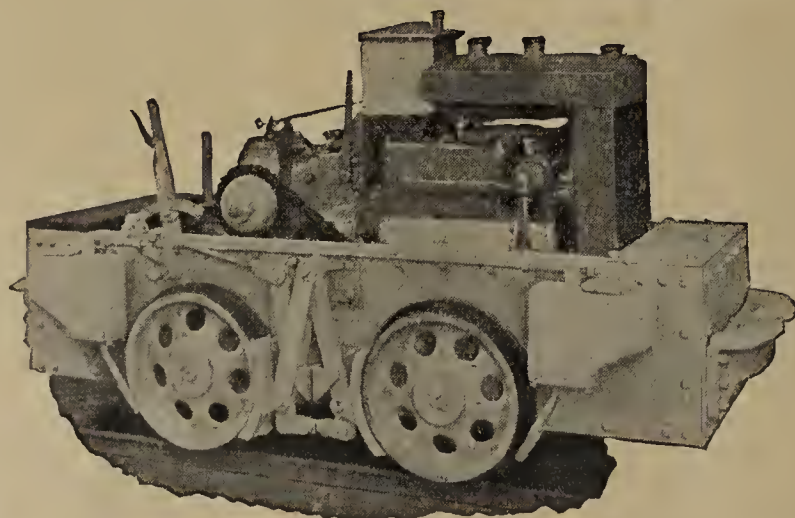
The Shreveport Brick and Tile Company of Shreveport, La., of which J. W. Peyton is the president, has purchased a 100-acre site on Douglas Island and will erect a plant for the manufacture of pressed brick. The annual output will be 10,000,000 brick, with storage capacity for 5,000,000 brick.

The Roanoke (Va.) Brick Co., Inc., has purchased the plant and equipment of the Roanoke Brick & Tile Corp., located at Webster, Va. The daily output will be about 20,000 of all grades shale face brick. D. J. Phipps, president; W. W. Hobbie, vice-president; J. C. Haley, secretary, and W. W. Hobbie, manager.

The three clay-working factories, the French China Company, Saxon China Company and the Strong Enamel Manufacturing Company, Sebring, Ohio, owned by Oliver H. Sebring, will soon be enlarged and new facilities installed. The improvements will cost \$250,000 and 300 men will be employed. At the French China plant, two more glost kilns will be erected and three decorating kilns, making the plant a fourteen-kiln plant. At the Saxon China Company, three glost and three bisque kilns will be added to make it a

(Continued on page 180.)

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

CLEVELAND, OHIO

100%

EFFICIENCY

SECURED IN THE USE OF

STEVENSON

DRY PANS / CRUSHERS / WET PANS
SEWER-PIPE PRESSES / STEAM TILE PRESSES
PIPE TURNERS / RECIPROCATING FEEDERS
ELEVATORS / BARROWS / GIGS / TRUCKS ETC.

BULLETINS ON REQUEST

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
801 Monadnock Bldg.
Chicago, Ill.

(Continued from page 178.)

THE ALKALITE.

fourteen-kiln factory. These two will be the largest factories in Sebring. The Strong Manufacturing Company will have a new addition to manufacture aluminum ware. This will be built on the west side of the present factory.

R. F. Angulo and two sons, who have been manufacturing mission tile at Santa Barbara, Calif., have purchased a five-acre deposit of excellent clay bed at Reseda, twenty miles from Los Angeles, and will establish there a mission tile plant. The plant will have a capacity of 2,600 tiles a day and will employ about thirty men.

The Railroad Commission of Texas has set for hearing on September 12 the application of the Thurber Brick Co. of Thurber and the Mineral Wells Paving Brick Co. of Mineral Wells, charging discrimination in favor of rock asphalt and against paving brick, through the application of lower rates on rock asphalt than on paving brick.

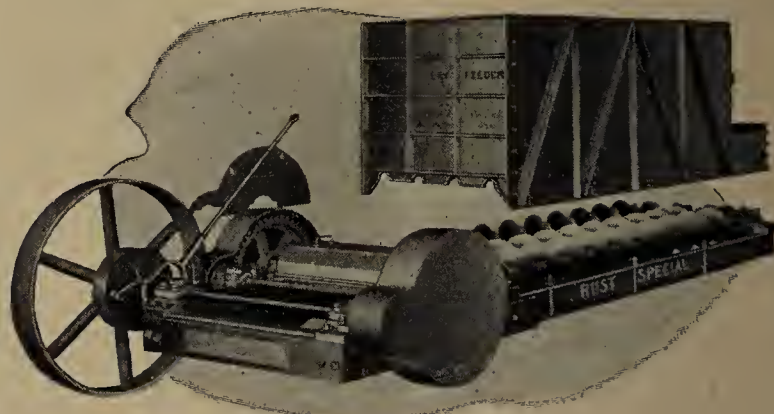
The Texas Chinaware and Novelty Pottery Company has been incorporated at Dallas, Tex., with a capital of \$50,000, and will manufacture all kinds of chinaware novelties. The company will erect a plant in Betterson Circle and will manufacture china toys, dishes, pottery and the like. The company will install three pottery and three bisque kilns.

We are in receipt of a letter from J. Mauricio Alvarez, Calle Comercio, No. 15, Santiago de los Caballeros, Dominican Republic, West Indies, stating he expects to install a brickmaking plant at that place, and would like to get in touch with manufacturers of brickmaking machinery and supplies. Mr. Alvarez would also like to receive catalogues.

Mr. and Mrs. James Sandison have just celebrated their golden wedding in Moberly, Mo., with a big family reunion. Mr. Sandison is one of the pioneer brick manufacturers and contractors of Missouri. In 1867 Mr. Sandison came to Missouri and settled at Huntsville. He started in the contracting and brick business. In 1872 he returned to Scotland, his native country, and was married there to Mrs. Sandison, a sweetheart of his boyhood days. They returned to America and resided in Huntsville until 1879, when they moved to Moberly and built the house in which they are now living. In 1880 Sandison built a brick works on West Gilman street and four years later moved to the present site. During the first year the output was 50,000 bricks a day. In 1907, when Mr. Sandison retired from the business the output had grown to 100,000 bricks a day.

One big difference between America and the older countries is they reverse the old, while we are always seeking the new. That's part of the answer of why we are leaders in progress.

ONE OF THE interesting and attractive publications coming our way is the anniversary number of the "Alkalite," received with the compliments of Eugene A. Hults, manager of the Mathieson Alkali Works, Saltville, Va. This official publication of the big Saltville industry gives a history of the discovery of salt and later the development of the great by-products industry which has grown up at that place. It is an illustrated story of the origin and development of a wonderful industry and the people who have made it, and are still actively engaged in carrying on the work. It shows a great list of products, the business of which amounts to about eighteen millions dollars a year and the products of which are used in many essential industries.



You Must Cut Your Costs---But How?

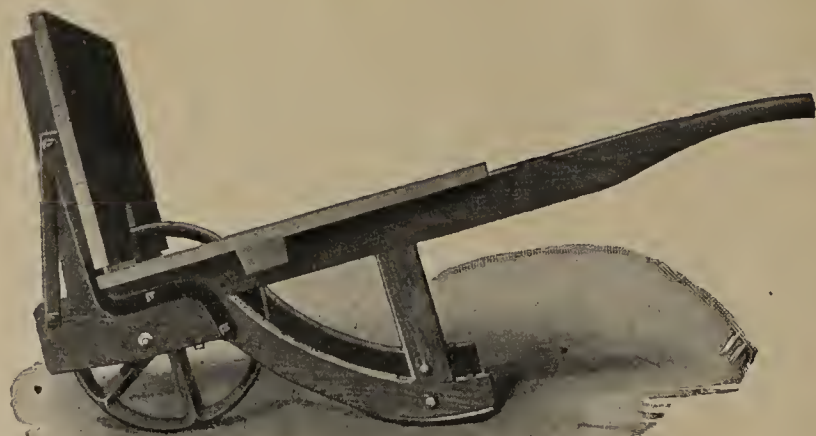
Use the RUST SPECIAL FEEDER MIXER. It will save the labor of two or three men and raise the efficiency of your plant in general. It keeps your offbearers busy at all times and the repairs and upkeep are too low to be figured.

Write today for information concerning all MARION EQUIPMENT for clay plants. No obligation whatever.

**Marion Machine, Foundry
and Supply Co.**

Box 156

Marion, Indiana



INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

**Toronto Foundry & Machine Co.
Toronto, Ohio**

Burning Clay Products is the **Most Important Problem** of all in the **Industry**. If the **Ware** is not **well burned** it has no **commercial value**. Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

A NEW CLAY PRODUCT TO BE MINED IN MISSOURI.

The Silumna Products Company of St. Louis has been organized for the purpose of building a factory to manufacture the Silumna products from the mineral that has been found to be abundant on the James Duncan farm near Eldon. T. P. Russell of Hurst, Ill., is president of the company, and A. B. Clark, formerly of Eldon, is secretary. Prospecting has been done by drilling to some extent near the mines and it is reported that the mineral has been found in almost unlimited quantities at a moderate depth. The company is selling stock and proposes to erect a factory either at Eldon or at the mines. Silumna is a combination of the words silica and aluminum. It is a soft mineral substance, appearing in crystal form and looks very much like soapstone, but is purer and contains no grit. It can be used for making chemical dishes, paint, tile, imitation marble, tooth paste and various other articles. It has the property of fire clay in that it stands a high degree of heat. After being melted and cooled it can be ground and used the same as emery.

INDIANAPOLIS BRICK MACHINE CONCERN ENJOYING GOOD BUSINESS.

A spurt is expected in the brick machinery manufacturing business as soon as satisfactory settlements are concluded in both the strike of coal miners and of railroad shopmen, according to George J. Potts of the C. & G. Potts Company of Indianapolis.

"The two labor tieups are interfering with our trade in that many firms are withholding orders pending the end of the strikes," Mr. Potts said. "Apprehension seems to exist among manufacturing concerns because of these two walk-outs and I believe that their conclusion will bring a good deal of new business in our line."

"The large amount of building under way throughout the country is helping our trade, however, since the brick manufacturing companies must keep their production of brick to the limit, and therefore must lay particular stress on the condition of their machinery. We are receiving many rush orders for repairs of this kind of machinery, and manufacturing concerns are shipping their equipment by express to have the necessary repairs.

Orders Being Rushed.

"When this condition exists, it is evident that these companies are being worked to the limit. The shipping of machinery by express is very expensive, and yet these companies see the need of increased production and therefore are spar-

ing no effort in putting their machinery in good condition. We are also receiving many rush orders for new parts.

"For the year 1922, to date, I would say that it has shown a good increase over the corresponding period of last year, and I believe the checking of figures for the year as a whole will show an improvement. Our new foundry now is in full operation, and the plant, as a whole, is working at about 75 per cent of capacity, which is 15 per cent more than it was six months ago."

The C. & G. Potts Co. recently received a large order from the Champlain Brick Company of Mechanicsville, N. Y., for machinery to equip an entire new plant, having a capacity for 100,000 bricks daily.

"This company for many years has operated a brick manufacturing plant on the Hudson river, and for the last twenty years has used machinery manufactured by this firm," Mr. Potts said. "The new plant will be larger than the average, and will contain two complete outfits for the making of brick. We have been working on the order for more than a month and expect to have it completed by August 15. The contract calls for two brick machines, two sanders, two large presses, two feeders, two pug mills for the mixing of clay, with line shafts, boxing and pulleys."

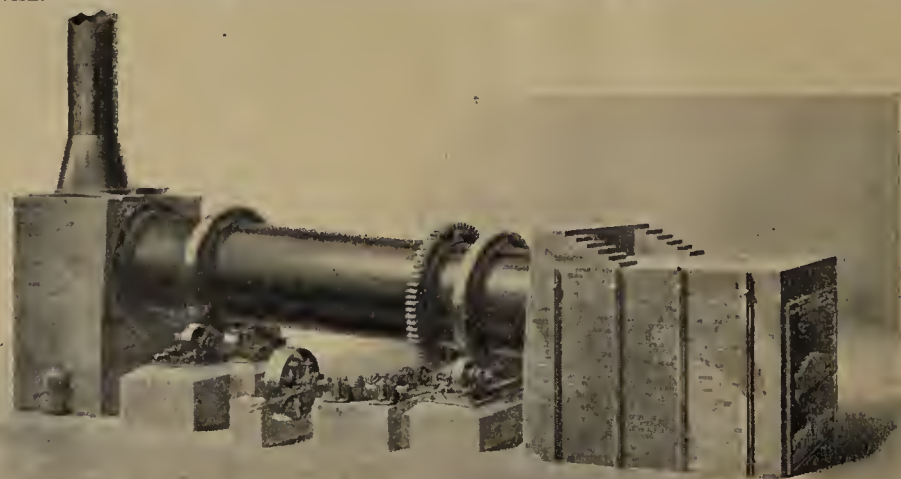
In addition to this contract, C. & G. Potts & Co. also are filling orders for several other brick companies, producing at present from eight to nine tons of machinery daily.

USES OF VITRIFIED CLAY PIPE IN PLUMBING SYSTEMS.

Preliminary announcement of cash prizes for the best paper entitled "Use of Vitrified Clay Pipe in Plumbing Systems" is made by S. E. D. Dibble, head of the heating and ventilating department of the College of Industries, at Carnegie Institute of Technology. The total amount of prizes is four hundred (\$400.00) dollars. The contest will be open to all practical plumbing and heating dealers, inspectors, etc., as well as to instructors and students in all educational institutions where drainage is taught.

Detail announcements of the rules and regulations of the competition, and the amount of each prize in the various classes, will be made about September 1st, 1922.

The contest is a move toward increasing building operations, having in view, particularly, the reduced cost of drainage work. It is advisable that competitors for these prizes obtain copies of Mr. Dibble's printed report of recent experiments on the use of bituminous jointing compounds for Vitrified Clay Pipe. The experiments were conducted at Carnegie Institute of Technology. Copies of the report will be sent upon request by addressing R. S. Clark, Office of the Secretary, Carnegie Institute of Technology, Pittsburgh, Pennsylvania.



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO



William Penn Builder of Brick Homes

When, in 1683, William Penn wished to do something for his daughter, Letitia, he built a house for her. And because he was a cultured gentleman, accustomed to the finest homes and architecture England had produced—he built that house of brick.

Letitia Penn's house stood where Penn built it until 1883—two hundred years—then it was moved to Fairmount Park. It is still in excellent condition, habitable, and used by the Park Commission.

In Penn's time the difficulty was to **get** brick. There wasn't enough to supply the demand. In our day brick must compete with many other excellent building materials. But none of them are the equal of brick in sturdiness, fire protection, age resisting qualities, and low up-keep cost.

Such qualities are good selling points. Use them in making people

Think of Brick First



WHY THE CONSTRUCTING ENGINEER SPECIFIED—AUTOBRIK ONLY

500,000 brick were chuted into the deep cellar of a building operation on the Hudson River near New York City—with a gratifying lack of breakage. When a second lot of brick was chuted the breakage was very high.

When this was reported to the engineer in charge of construction, he investigated and found that the first consignment had been AutoBrik. The second was ordinary brick.

He immediately requested "AUTOBRIK ONLY" and **only** AutoBrik were used in completing the building.

Manufacture the brick that gains good will and repeat orders—AUTOBRIK—the uniformly excellent product of the

AutoBrik Machine

Ask us what experienced brick men say about the AUTOBRIK Machine—and let us send our interesting illustrated catalog.

Lancaster Iron Works, Inc.

Lancaster, Pennsylvania, U. S. A.

Brick Machinery Dept.

James P. Martin, Manager

Branch Factory, New London, Ohio

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.

Mention THE CLAY-WORKER.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Written for THE CLAY-WORKER.

LOUISVILLE BRICK NEWS.



HAS BEEN A BOOM year in building operations in Louisville so far this year and building plans are still going forward at the rate of a million a month. The July record topped a million and the total for the first half of the year was in round figures ten million, which is even larger than early optimistic expectations. The indications are too that the work will go on merrily all through the fall except where hampered by lack of material and transportation.

The great problem right now is that of fuel to produce brick and hollow building tile, and get cars for transportation. At this writing the fuel trouble is more acute than anything else and is causing the closing of some plants.

T. Bishop, of the Southern Brick & Tile Co., says they have had to close both their plants near here, the plant of the Southern Brick & Tile Co., at Buechel, and also that of the West Point Brick & Lumber Co., at West Point, for lack of fuel. They have a little stock on hand but more orders than stock consequently they are suffering business loss through fuel shortage. There is plenty of demand for brick and it is just a matter of getting coal, but that is a serious matter right now and one in which there is not much chance for relief except in the settlement of the coal strike in some way that will insure plenty of coal all around, because in the priority arrangement fuel for brick is about fifth on the list.

J. T. Howington, of the Coral Ridge Clay Products Co., says they have been able to keep running so far and they have a very active demand for brick and a fairly good demand for hollow tile. In fact they are busy all around and but for hampering influence in fuel shortage and transportation this would be an unusually good year with them. As it is they are at this writing worried a little about the fuel outlook.

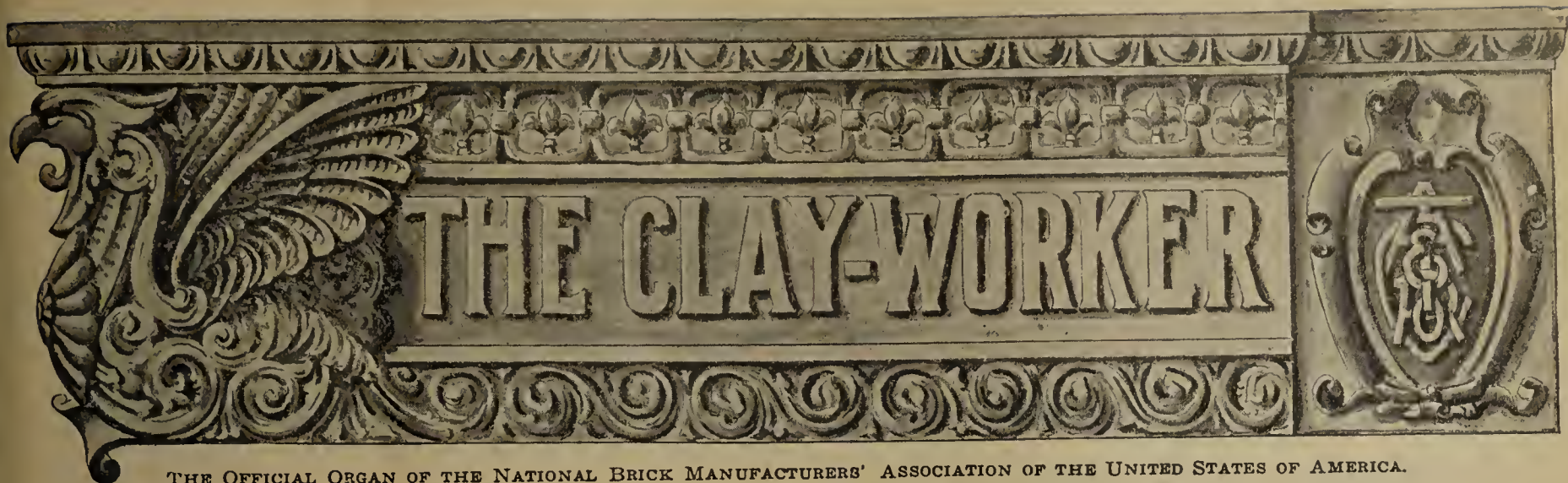
J. L. Bolster, who is agent here for the Bush Brick Plant at Knoxville, and a number of other important producers of brick and clay products, says there is a good demand for brick and there is some car trouble but the main source of apprehension is the waning fuel supply. The Bush plants are still running he said but were a little apprehensive about the fuel supply and are not fortified with any heavy stocks ahead. In fact the demand has kept the brick pretty well cleaned up from the yards of all plants and a shut down for lack of fuel would cause a shortage all around.

J. S. Sleeper, advertising manager of the Hollow Building Tile Association, who was a recent visitor in Louisville, says that the manufacturers of hollow building tile are beginning to feel the fuel pinch and are rather apprehensive about the fuel supply unless there is an adjustment of the difficulties between owners and miners right away. There is some car trouble too which hampers transportation but the most serious problem all around is that of fuel supply.

The Progress Press Brick Co., with plant on the Popular Level road, reports that so far they have been able to get fuel to keep going but they are a little bit apprehensive that unless the condition in the coal supply improves they may run out of fuel soon. They have a little stock on hand but orders enough to practically cover this and on the whole business will be good with them unless they are compelled to shut down for lack of fuel.

COLONEL.

Mortar and its color has enough to do with the beauty of a face brick wall that both the producers and the distributors of face brick may well take a lively interest in mortar colors and qualities.



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ORIGIN OF BRICK: The Passing of Hand Molded Brick and the Advent of the Brick Machine and Shale Brick. Primitive Methods of the Pueblo Indians of New Mexico, Who Still Use "Dobie" Brick, Which Are Quite Durable in That Dry, Warm Climate.

(ARTICLE FIVE.)

THE BRICK MAKING INDUSTRY had started to spread over the entire colonies, and in 1750 Western Pennsylvania began manufacturing; by 1792 the industry had a strong foothold in the Hudson River valley. Records show the Colonies exported over 700,000 brick to the West Indies and other places in 1790. Common brick are said to have been made in Chicago in 1812 and in Indianapolis in 1822.

For many years the raw materials used for common brick were the soft plastic surface clays, that being the only material that could be used with the methods then known and until better and stronger machinery was introduced. With the development of improved manufacturing methods, brickmakers turned their attention to the shale deposits. Records show that New York was the first state to use shale, doing so in 1880. Indiana followed second in the early nineties.

The early plants established in this country were small, requiring little capital, and using the crudest forms of machinery. The bricks were moulded by hand and burnt in crude kilns. Later horse-power machinery was introduced for pugging and moulding the clays. The drying of the brick had to be carried on in the open air; this made it impossible for plants located where they encountered freez-

ing weather to operate the year round. As time went on, the process of manufacture was greatly improved by the introduction of steam machinery, driers using artificial heat, permanent construction of kilns and better regulation in burning, enabling the manufacturers to reduce their production cost and improve their ware.

The Unburned "Dobie" Brick.

In New Mexico we still find the Pueblo Indians making the large adobe brick in the same manner as of old, using them in their buildings and garden walls and have a large demand for them from the American population in that territory for their buildings. The process of moulding adobes in wooden forms was not used by the Indians until after the Spaniards had entered these parts in the sixteenth century. Up to 1540 the Pueblo method of preparing the material and erecting their masonry where stone was not available, was done by gathering great piles of twigs of Thyme (sage brush) and



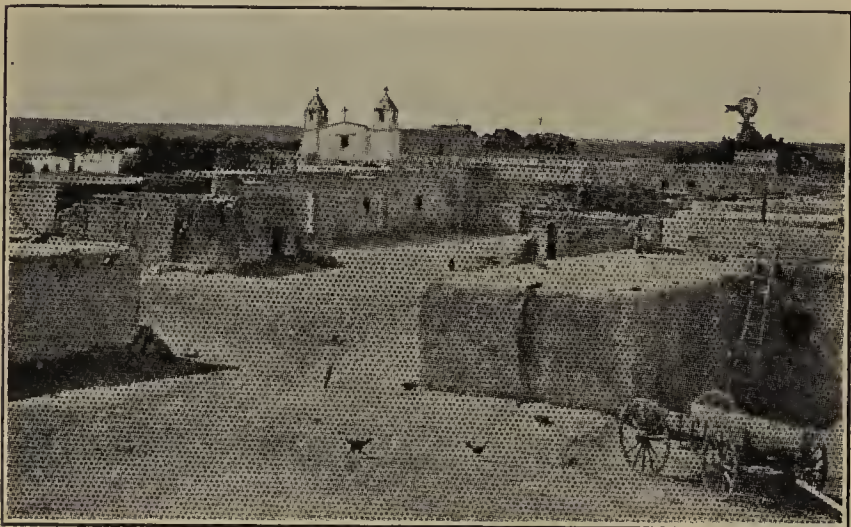
TYPICAL PUEBLO INDIAN DWELLING. The Indian pueblos of New Mexico are picturesque anywhere and always. Here is his home, his meat is drying from the roof, the kindling wood and bake oven at the front door. The cowhide stretching upon the ground, and sheep skin drying in a rack. The meat he eats, the skins he trades, he therefore asks no aid from Washington.

sidge grass and set it afire. When burned to half coals and ashes it was covered with great quantities of clay soil and water, then thoroughly mixed until it was in a plastic form. After the Spaniards had introduced wheat in that territory the Indians used the straw that had been chopped by

the tramping of their horses on the threshing floor in place of the charred brush and found this to make better brick. Their greaest need in making these brick was water, so for this reason their towns and brickmaking were near streams of water.

When moulded, these adobe brick were usually 8 to 10 inches wide, 4 to 6 inches thick and 18 inches long, and placed in a standing position in the air and sun for drying, slanted a little to allow the moisture and rain to leave more quickly. The same material would be used for mortar to lay these adobes into a building.

There being very little rain in the Southwest, the only place where its action could be noticed was at the base



PUEBLO OF ISLETA (SHOWING CHURCH IN DISTANCE)
NEAR ALBUQUERQUE, N. M. The Pueblo of Isleta is situated 13 miles south of Albuquerque, one of the most modern of Indian pueblos being about 300 years old. Population 1,300 and is not decreasing. Owing to its nearness to the Santa Fe mail line and Albuquerque, the Indians prove an interesting sight to visitors, and readily purchase from their own hands pottery and other articles that these Indians manufacture.

of the wall or building. There was as much, if not more, damage done to these building by sand storms. When these walls would become pitted quite deep, the Indian women (using their hands in place of trowels) would go over the walls and recover them with soft clay soil to brighten up the building. Their buildings have a reddish color, due to the color of the soil used.

There is a large adobe church on the summit of a high hill built by these Indians, all the material being carried there from the planes below, where they were made. These Pueblo Indians say the smoke arising in front of the church is caused by spirits and only occurs once a year, and give this as the reason for building the church at that place.

The Indian and his home shown in these pictures are at Albuquerque, New Mexico. The Indian makes his ware and burns it in the small adobe kiln just outside his house, using wood and twigs for fuel. This being the favorite occupation of these Indians, their ware being disposed of by peddling on the streets of Albuquerque.

ROADS TO LAST.

Hordes of autos now remind us

We should build our roads to stay,
And departing leave behind us

Kinds that rains won't wash away.
When our children pay the mortgage

Father made to haul their loads,
They'll not have to ask the question,

"Here's the bonds, but where's the roads?"

A paraphrase of Longfellow's poem, which adorns the office of the Highway Commissioner at Albany, N. Y.

IMPORTATION OF BUILDING BRICK.

THE USE OF FOREIGN BRICK imported for the purpose of breaking the market price of brick in New York and other seaport towns has been the subject of much discussion in building circles. The first actual importation recorded occurred recently, and the results do not give much promise of further attempts of that sort. Referring to it, Mr. Allen E. Beals in the weekly bulletin of the Dow daily bulletin service, gives the following interesting story:

Phantom foreign brick, supposed to be selling to contractors in the New York market at half the price of Hudson common brick, helped to pile up a surplus on the Hudson river distribution market last week.

Every avenue of intake for building materials in this market was thoroughly combed by The Dow Service to find out who had foreign brick for sale at a price around \$10, delivered, as rumored, and the only basis that could be found for the report was a schooner load of brick from Nova Scotia



THE SHOW PLACE OF THE WEST. WRIGHT'S TRADING POST, ALBUQUERQUE, N. M. Headquarters for Indians and their curios. The building is modeled after Indian architecture, rises three stories; each terrace being built back over the one below, the roof below answers as the front yard to the above story. Note bake ovens on roof above, round dome shape. Besides Indian is a navajo sweat house where the Medicine Man cures the sick.

brought in by the captain of the vessel on speculation for his brother who is a brick manufacturer there.

This man's experience was such as to discourage him from further efforts to bring brick here. After all his expenses had been charged up to his cargo, with fair sailing conditions, he told dealers to whom he offered his cargo that he could not sell the load of 300,000 below the then current price of \$20 a thousand, wholesale, dock, N. Y.

Some of this brick was finally disposed of at South Brooklyn, however, at a shade below the market. The brick was slightly out of American size and the speculation represented a loss to him. He was told he could get \$30 a thousand for his brick here, wholesale.

BRICK FROM DENMARK.

Another attempt to bring in foreign brick to be sold in competition with Hudson brick has failed. A shipload of 230,000 were brought in from Denmark and unloaded in Astoria last week at \$20 a thousand. They were excellent brick, evidently of shale manufacture, and would have been suitable for front brick, although larger than American standard brick. They had been loaded by chute and unloaded by bucket and dumped upon the dock so that excessive breakage and mutilation occurred. To have handled this brick by hand in and out of the ship would have run the dock price up to \$30 a thousand, dealers declared.

Second hand brick is in excessive demand, wreckers claim-

ing that speculative builders, seeking best possible margins, prefer good cleaned used brick to the cheaper grades of new brick. For that reason the market price for high class used brick remains at \$45 to \$47.50 per load of 3,000, in spite of the lowering of certain grades of Hudson river prices to approximate levels.

The New York City Market.

Common brick from the Hudson river district is not in as great demand as formerly. Building construction activity has slackened in all parts of the city although the brick movement into Brooklyn during the latter part of the week indicated a revival of activity. A certain group of builders had been led to believe that by holding off their purchases there would be a great drop in prices in lumber, cement brick and other associated commodities. Meanwhile many building material prices have advanced, and, indeed, the question of supply now is growing particularly acute, in cement, glass, metal lath, wire lath and some of the equipments.

Deliveries that formerly took a week to come from the South and Ohio now are thirty days in transit. Experienced building material purchasers among dealers are placing orders far ahead of current requirements and even then there may be an absolute famine in some lines, particularly cement, out of the Lehigh Valley district by September 15, unless coal is made available shortly. Plants have been forced to close in



HOPI SNAKE PRIEST ENTERING SNAKE KIVA, ORAIBI, ARIZONA. The Snake Kiva (or sacred dwelling) is the depository for the snakes collected during eight days prior to the ceremony, where they are stored in jars. The priests enter naked except a loin cloth bearing a bundle of food, a snake whip and bag of meal, and handles the reptiles with the utmost unconcern.

that main source of supply for New York one by one, at first, and lately, by groups, since the coal shortage became so aggravated. New England shipments are coming in freer than in any other section.

Slump in Price of Brick.

Brick prices have dropped. Best grades are today top at \$18 a thousand, wholesale (to which must be added, for delivery costs, handling and haulage charges and 10 per cent). From this price quotations scale down to \$16 for run-of-market brick. Five loads were being offered in the market at the week-end as low as \$15. This brick was classed as being below market standard, most of which was the product of burning the clay with fuel of inadequate quality and quantity.

The brick price slump was attributed to the fact that demand had suddenly fallen off in Brooklyn, although it had picked up considerably in Manhattan, where, three weeks ago, it was in a reactionary mood. Eighty barge loads were in process of being distributed in this city, an unusually large quantity for this time of the year, and there were 28 in the wholesale market still unsold at the week-end.

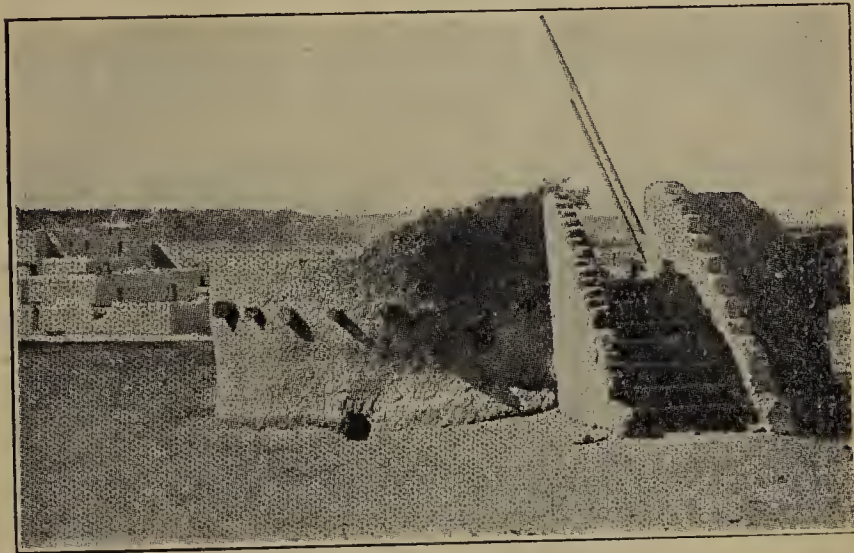
According to the best available estimates of brick reserves for New York and vicinity, covering any possible spurt in building activity for the remainder of the year, there are about 85,000,000 burned brick up the river ready for shipment and about 165,000,000 "green" brick, that which is in the form of moulded clay, but not yet burned.

It is judged, therefore, by those competent to express an opinion on the subject, that the present drop in brick prices is at best temporary. Many plants in the Hudson district are equipping their plants with oil burners which can be operated all winter. This development, at least, assures the prospective builder that there will be a sufficient quantity of brick available for current construction requirements for the remainder of the season and early next year before brick manufacture starts.

THE HORSE AND THE CAR.

ONE DAY WE read that the world now has 12,588,949 cars and that 10,505,660, or 80 percent, of these are in the United States. The next day we read that the United States horse holds its own with the car because there are 21,848,066 of such animals in the United States and that they outnumber the autos four to one.

This is a typical illustration of how our statistical experts juggle figures, and in this case the horse advocates make a rather poor showing. The actual figures indicate motor cars and trucks to half the number of horses. If this is true, considering the horse power per truck, the horses are already greatly overshadowed in the performance of the cars and trucks. One car, truck or tractor carries anywhere from 10



PUEBLO INDIAN ESTUFA OR KIVA, N. M. A large circular external wall, (turret like) with closed in roof. Access being only by descending a ladder through a hole in the roof. Of the mysteries that take place here practically nothing is known for in spite of the fact that the Indians of New Mexico and Arizona are nominally Catholics they are intensely conservative regarding their ancient religious rites.

to 100 horse power, and the figures on their face indicate that the horse is being rapidly replaced both as a means of travel and as a beast of labor and burden.

The horse is a noble animal and there will always be places where he will render splendid service, which it is really a pity to make him render. Burdensome service should be performed by mechanical power where practical and no one in this country can doubt that the motor has sounded the relief of the horse from the burden of labor for mankind. At the present rate of progress a few years hence will see many horseless farms just as today we see many families with what was once called the horseless carriage.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Five—"Engineering as Practically Applied to the Brick and Tile Industries" and "Cooling Kilns."

By W. D. Richardson.

THE ENGINEER is coming to the front in the affairs of the world today, industrially and politically. He has been doing the constructive work for a long time, but his value was not generally recognized until the stress of war demanded men who could do things. The man behind the gun, the man who kept the machinery of destruction moving steadily, systematically and relentlessly forward to victory, as well as the man who organized and directed the relief to the helpless and starving peoples, was the engineer. And in peace, the ablest and foremost man in our administration today the man who, in my opinion, should have been and would have been made President, had not party politics demanded a man of words rather than deeds, is an engineer.

Some such thought as this may have led our Secretary to give a place on our convention program to an engineer, to talk of himself and his profession. Of course, I am pleased at this and also that Mr. Chase proved to be equal to the occasion and fulfilled every expectation in the able paper he presented. I will not attempt to expand upon his contribution, but the subject tempts me to refer to my own experience as a pioneer in the field of brickworks engineering in America.

After a number of years of practical experience in brick manufacture, beginning my practical training as a worker in every department, until, later as superintendent, I was able to take any man's place on the yard, it happened that I was, during a delay in the construction of a new plant, called upon for engineering service. Realizing the need in the industry for the engineer, I consulted Prof. Orton, then director of the new department of Ceramic Engineering at Ohio State University, as to the advisability of entering this field and endeavoring to prevent some of the losses from unwise ventures and improper equipment. He did not hesitate to say "Richardson, this is the very thing that ought to be done and you are the man to do it. Go to it." I want to say here that I can never repay Orton for the encouragement and assistance that he gave me during those years of struggle in this new field. Though the business did not prove to be financially profitable to me and I was seldom called upon to serve those who needed most the help that I was prepared to give, yet it was an interesting and instructive experience.

I was practically forced back into brick manufacture again in order to properly support my family, and then seven years later, at the close of the war, again entered the engineering field. While I find today the brickmaking industry making more use of the engineer than formerly, yet the situation is not such as to offer much inducement for the ceramic graduate to give up a factory position for professional engineering. I say give up a factory position, as I do not assume that he would consider himself a competent engineer without having had some years of factory experience. There is plenty of work in the industry for such an engineer, but the industry does not recognize it as it will some day, and waiting for professional employment is a tedious occupation for an active man of technical training.

Since I first started in this line there have been many entries in the field, as the advertising pages of The Clay-Worker would show, but they have dropped out or been starved out, or else have gone into commercial engineering, with something to sell besides their services. Ellis Lovejoy,

with whom I was associated five years, is the only exception, the only one who has stuck to professional, consulting engineering for the clay industries, and it is safe to say that his ability and scientific attainments would have brought him more money in almost any other line of work, but the industry has been benefitted by his service and the literature of the art of brickmaking has been enriched by his valuable writings.

It is fortunate for Mr. Chase, if he is to continue in this line, that he is not dependent upon the brickmaking industry alone for his engineering practice, though, as I have said, there is plenty of work that should be done by the engineer in this line. Modern brickmaking plants require such a large investment that no project should be capitalized without careful investigation by a disinterested man of wide experience and technical training, and no plant should be built without the detailed drawings and specifications of an engineer. But the fact is, as I have found in my engineering practice, very few see the need of such service, and they are the men who have had the longest and most successful experience in brick manufacture. Our practice comes mostly from well-established concerns, rather than from beginners. The professional man does not go out after business, but the equipment salesman does and he easily persuades the inexperienced investor that brick manufacture is very simple and that all the engineering service required goes gratis with his contract for machinery or other equipment. The practice of manufacturers acting as engineers and furnishing plans and specifications and engineering advice to customers, with a view to avoiding the engagement of an engineer, exists, to some extent, in other industries also and has been condemned by the American Institute of Consulting Engineers, but in the brickmaking industry such practice is still prevalent, though not so universal as formerly, and will decrease as more competent engineers in this special line demonstrate the superiority of their installations.

Cooling Kilns

Marion Blair, to whom we always look for something worth while, presented a short paper upon a subject that has been given slight consideration by many brick manufacturers. A proper system of cost accounting must first establish a valuation, a capacity and earning power of every piece of equipment. Some have not realized the importance of working a kiln, like a machine, to its utmost capacity, letting it stand idle as little as possible. Even the cooling should not be a passive, time-wasting operation. While portable cooling fans are now in quite common use, they were rarely seen a few years ago. To be sure, many used the large fan for drawing the heat from kilns to dryer, but this was during the period of high temperature and rapid cooling and saved no time over natural cooling. After the dryer fan was taken off came the slow cooling and waste of time, until men would work in the kiln taking out brick. With a blast of air being blown into the kiln, men will work in it 24 to 48 hours sooner, without complaint. This is a practical thing to do wherever electricity is available, and where is it not these days? If it cannot be bought, it can easily be generated for such scattered power requirements, as well as for light. I wouldn't want to use gasoline for any operation on a brick plant, except for deliv-

ering the product to the local market.

There is one point in Mr. Blair's paper that should be brought out for discussion. In some cases there is danger of damage to ware by rapid cooling, and his statement that "once 1,000 degrees or less is reached, the danger of cracking from rapid cooling is passed," might get someone into trouble. I would reverse this statement and say "above 1,000 degrees there is no danger from cooling, but when once 1,000 degrees has been reached, be careful, the danger period is just ahead." It is just after the incandescence has disappeared that too rapid cooling may cause cracking that can be easily heard by one who listens. In the first few years of my brickmaking experience I wasted much valuable time of kilns in cooling slowly while the brick were red hot, and no danger, and then after the red had disappeared, opening up the kiln, sometimes cracking the brick. A little reasoning and observation afterwards taught me, before the day of waste heat dryers, that as soon as the burning had been finished, the casing could be torn out of wickets and the kiln opened up with impunity for rapid cooling, but as soon as the incandescence began to disappear, the casing must be relaid and the inrush of cold air checked. However, it is true that the lower the temperature in the kiln, or the less the difference in temperature inside and outside of kiln, the slower will be the cooling by natural means and it is then that the cooling fan comes into play, its chief use being on the kiln being emptied.

It seems also that Mr. Blair is a little reckless with his figures when he states that "a heat of 800 to 600 degrees is too hot for comfortable working." I have worked in some hot kilns myself, sometimes to encourage my men when we were in a hurry. Those were in days when we didn't measure temperatures in kilns and I do not know just how hot it was, but it is safe to say that 600 degrees is too hot for "comfortable" working! It was hard to get union labor to go into a kiln with a heat of only 100 degrees in the top and finally, in making a new contract with the union, we considered that we had obtained a concession when we got in a specification "Kilns to be drawn shall have the first two benches taken out when the thermometer, suspended one foot below the top of the crown in center, shall show a temperature of not more than 110 degrees and the balance of the kiln shall be drawn when the thermometer drops to 100 degrees." Even then, and for a long time before this was in the contract, we had a portable electric fan blowing air upon the men in the kiln. I realize that this is an extreme case, but if you let into your plant the International Brick, Tile and Terra Cotta Workers Alliance, you will run up against just such things.

THE HOME AND THE AUTO.

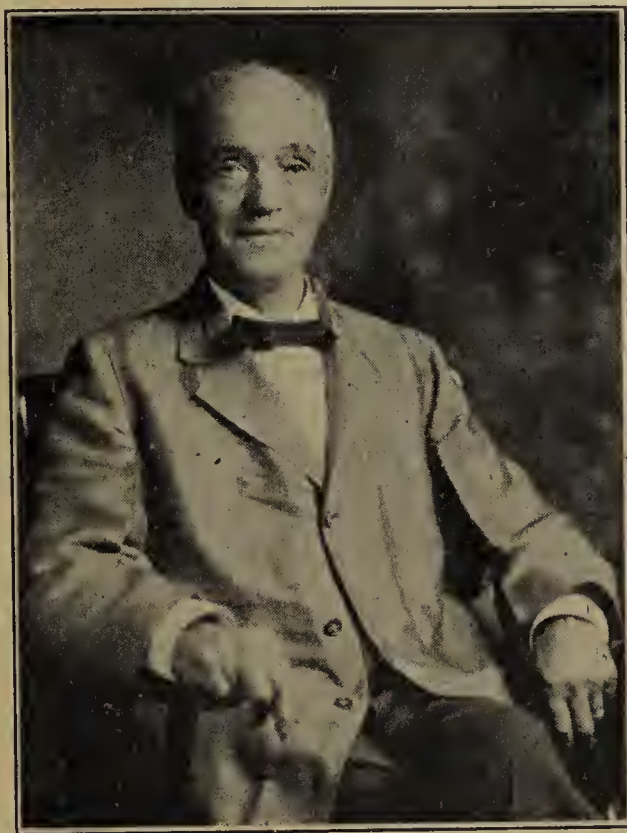
Some figure shark has demonstrated that there are about six million American families who own their own homes while there are between nine million and ten million who have automobiles. The idea is to show that more people own automobiles than own homes and that we should have fewer autos and more homes. There is an assumption that the average man cannot maintain both a home and an automobile. Personally we are strong for home building, but somehow we don't have much faith in these figures and deductions, for the chances are that a lot of the people who own automobiles also own homes, and anyway the way to promote home building is to sell the home idea and not fuss about automobiles.

If there are twenty thousand fires a year from defective chimneys it is certainly time to enforce a standard safe form of construction for chimneys and flues.

Written for The Clay-Worker.

RECOLLECTIONS OF AN OLD-TIME BRICKMAKER.

I BEGAN WORKING for the "Union Yard" in St. Louis in April 1876. The Union Yard was situated on Glasgow Avenue, and occupied about four city blocks and had in use three "Sword" stiff mud machines and made about 10 million bricks in a season of six months, and also one five-mould hydraulic press making about 22,000 per day of 10 hours when operating steadily, but ordinarily was in the repair shop about one-half of the time. The Union Yard was organized in 1873 by Col. Metcalf, who bought out the defunct St. Louis Brick Company and changed the location and the name to the Union Press Brick Works, which consisted of Col. Metcalf, president; Geo. W. Simpkins, secretary; Judge Breckenridge, Mr. Ephson Catline, Mr. Holmes and the Hydraulic Press Brick Company of St. Louis. About 1878 Col. Metcalf sold out his interest to the Hydraulic Company.



John M. Williams, Pioneer Brickmaker of St. Louis, now in His Eightieth Year who has probably made more face and common brick than any one else in the country.

The kiln capacity of the Union consisted of nine open-top, coal fired kilns. Each had a capacity of 300,000 bricks, 75 long, 40 high and 40 wide and a 3 brick bench, and a 2 brick fire space, from wall to wall of the kiln and 8 ft. grate surface, 3 grate bars 24 inches long by 22 inches wide, grates 9 inches wide, pit 12 inches deep, the side kiln walls were 4 brick, 36 inches thick at the bottom, 6 ft. high and the top 2 bricks thick. We dried off with cord wood for eight watches of twelve hours each and got the kiln dry and hot ready for the burners who burned the kiln in eight watches of twelve hours each. We used about twelve cords of dry oak wood on each kiln burn and about nine bushels of coal per thousand brick, more or less.

The dry press brick were set only in the facing of the fire space along the sides of the grates, where they stood the heat better than the stiff mud brick, and in our paving and red brick region, and always setting 5 courses of stiff mud brick on the top, and 4 courses on each side along the walls of the kilns, keeping the dry clay brick for the red brick and stock brick region. Our stiff mud brick were dried on floors provided with a shifting roof, taking from 6 to 10 days to prop-

erly dry, ready to set in the kiln. These brick lost about 12 oz. each of water on the drying floors. Before setting in the kilns, we piled out about twenty thousand stiff mud brick per day, for winter use as we could only run the stiff mud machines six months in the year while the dry clay press could run eleven months per year.

How Brick Were Made Fifty Years Ago.

The combination of making and setting two stiff mud and one dry clay brick gave the Union Yard a good and deserved reputation with our brick contractors who gave us from 25 cents to 50 cents per thousand for a merchantable job of brick work.

In those days brick were sold as a merchantable job or kiln run, a hard and red job, or a strictly hard; and paving brick for side walls. In those days side walls were nearly always made of brick, price about \$10 per thousand. Early in '78 or '79 the hand brickmakers in the city met together, and declared they would put the price of brick so low they would put the machine yards out of business, and kept cutting the price in two years from \$7 to \$4 per thousand, delivered. That game of freeze out drove nearly all of the machine yards out of business. However, all the time that common brick were selling below the cost of manufacture, stock or face brick were selling at \$35 or over, and the Hydraulic and the Union yards being the only companies who were making a first class red stock brick were more than holding their own in the brick business.

In those days only the standard size brick were made, red the only color, red were made by some of the St. Louis brickmakers, the buffs, grays and other shades then and various shapes and sizes other than the standard size, were made in the early eighties only by the Hydraulic Company, who were the pioneers in making that class of brick. They were also the first to successfully make the white enamel and other colored enameled bricks. They spent money freely in experimenting, before they succeeded in putting on the market a better product than the imported English enameled brick and they still maintain their reputation in that particular; they are still "the leading brickmakers in the world," in all the various lines of the industry, and a brickmaker who has graduated from the Hydraulic school of brickmaking may be proud of his school.

An Early Venture in Paving Brick.

St. Louis was one of the first cities in the country to make street pavers successfully, in the late eighties, a steamboat owner, Capt. Keyser by name, and others, built a yard to make street pavers on the Columbia bottom road near Prospect Hill. They spent a good deal of money and time for a year or two in trying to make a marketable street paver, and failed, and the plant was abandoned and left to go to ruin and decay. I do not know the cause of the failure, but it was total. Shortly after that, there was built at Glen Carbon, Ill., about eighteen miles from St. Louis, a plant for making street pavers, they had coal and shale in abundance and ample capital and a good market for a good product, but after operating for a few years, they also came to grief and quit operating.

Later the Hydraulic began making street pavers for the market, and have been quite successful in making a satisfactory street paver out of a shale they have about 15 miles by rail from St. Louis, owning their own railroad cars. With proper material and proper care used in the making, a shale street paving brick is unexcelled by any other material used for that purpose. Where brick roads have failed, it has been in the fault of improper material and improper burning. Given the right material and the proper burning, shale is the best material for road surfacing, cost being considered, of any surfacing material that is used for that purpose. And if the

brickmakers of the country would insist upon using only the best material, and the best method of manufacture known, there would be fewer failures in the business of making street pavers. A bad piece of brick road gives the concrete men, the asphalt men and the cheap John men a good deal of satisfaction in showing it up; the good brick road is above criticism.

A Fine Brick Plant in 1877.

To revert to the Union Yard, it was moved in 1877 to the new yard and was a success in every way. Just before we began building the new plant on a tract of about 75 acres in Kings Highway and the Natural Bridge Road, I asked Mr. Sterling, the president of the company, what kind of a plant he wanted to have built. He was then about to go to Europe for a year or so. His reply was, "Just as good as you know how to build for money." When he returned, I showed him around the plant without any comments, and after we had made the circuit of the yard, I asked him what he thought we had been doing while he was away. His reply was, "I know what you have been doing, you have been spending a whole lot of money. But we have got our money's worth. It is the best laid out, and the best built brick plant I have seen anywhere. You have done well." For a man who was not given to much talk, it was saying a good deal and I was much pleased with what he said.

The new yard had a capacity of 190 thousand per day, afterwards increased to 230 thousand per day by running at night on the two dry presses with 18 kilns, each 325,000 capacity. A very small per cent of these brick were shipped out of the city. The only big shipment I recall we made from the old yard in 1878 or '79 to Winnipeg, Canada, for the Government House there; it consisted of a good many carloads, 200 or 300 thousand at \$40 f. o. b. St. Louis. The freight rate was about the same, nearly \$40 per thousand, St. Louis to Winnipeg. We did not lose any money on that sale, nor did we have many like it.

During my connection with the Union Yard, a period of thirty-three years, I superintended the making of a billion of building brick. Some years we delivered as many as 43 million, seldom less than 30 million from the new yard and could have sold more had we had them to sell. Our business came to us, we did not have to go after it. Why, I don't know. It is not so now, you have got to go after it with a shotgun. I guess it is the old story of supply and demand. I rather think the concrete man has had something to do with it. But nevertheless I think the brick business will come back again in 1923.

An Experiment With a Continuous Kiln.

We built a "Graves" continuous kiln, costing about \$25,000. It was an open-top kiln, the cover being made out of burned tile, cinders and burned brick, put on top of the ware as the rooms were filled with the green brick, each room or chamber held about 43,000, a day's output for one press. The kiln consisted of 14 of these rooms and we expected to fill, dry, burn, cool off, and empty a room each day of 24 hours. The kiln was fired from the top through flues left in the green brick about 2½ inches square, using Illinois coal screenings for fuel, feeding about two quarts in each flue at each firing shaft. These firing shafts emptied into a flue about 9 inches wide and 16 inches high from side to side of the kiln walls. The firing shafts and the bottom were spaced 36 inches apart both ways of the kilns. The rooms were set about 26 brick high, not counting the covering. The scheme looked very well on paper, we were told we would save all the cost of the drying and one-half of the burning cost in a continuous kiln and complete a round of the kiln every 14 days. Well, that kiln kept us all guessing, made me baldheaded and gray haired,

long before we got tired of experimenting with it. The expert burner we got from Milwaukee, Wis., went bug-house and, well; we gave it up after more than a year's time, and we were all glad when it was torn down and dumped in a nearby hole. But for all that, dear brother brickmaker, I believe a gas fired continuous kiln is the ideal way of burning building or street paving brick, and had the kiln, built by the Union Yard 20 years ago, been one of the right kind, it would have been in use today, I believe.

I am at this time the only brickmaker that I can recall who was in the business in St. Louis forty-five years ago, except Brother Anthony Jtner, who has ceased to be active in the business the past few years, whom I meet quite often and chat

with about old times and old friends who have gone before, Mr. Sterling, Mr. Eliot, Mr. Graves, Mr. Middlekauf, Mr. Simpkins and others who were the founders of modern methods in the brick business in this city and vicinity. The brickmakers of the city of St. Louis have had hard times for a number of years, but I think the tide has turned and we are on the road to better business in all lines from this year on. The past two or three months have shown a very marked increase in the erection of dwellings, flats, and apartment houses and it looks, barring a prolonged coal strike, as if the remainder of the season will be more than good.

JOHN M. WILLIAMS.

St. Louis, July, 1922.

NOTES ON SHIVERING OF TERRA COTTA.

By John L. Carruthers.

ABSTRACT.

Six terra cotta clays are tested for shivering as a body trouble using a white mat glaze, at cone 3 starting. One non-shivering clay and one badly shivering clay are experimented with, to produce and overcome shivering.

Causes of Shivering.—From this work and that of others which has been checked, causes are

- (1) presence of finely divided silica in the body, from
 - (a) highly siliceous clays
 - (b) finely ground grog of a siliceous nature
- (2) presence of soluble salts in the clay, grog, or tempering water
 - (a) longer firing periods

Methods of Eliminating Shivering.

- (1) Use of a flux such as feldspar, felsite, or similar rock to overcome action of fine silica
- (2) Use of coarse grog or sand
- (3) Use of barium carbonate to overcome effects of salts

SHIVERING AND CRAZING are the glaze and body problems that nearly all manufacturers of terra cotta or other glazed clay wares have had to contend with at one time or another. A great deal of experimental work has been done by this Company in previous years, in an effort to eliminate shivering by fitting the glazes to the body, and a small amount of work had been done toward correcting the body. The results were quite successful, with only occasional shivering taking place, probably due to variations in the body. In the summer of 1921, a great deal of shivering trouble occurred, and due to the fact that it seemed practically impossible to correct the trouble by changing the glazes, a study of the constituents of the body was undertaken, with the purpose of fitting the body to the glazes in use.

An investigation of ceramic literature shows that there is a difference of opinion among some of the investigators, as to the causes of shivering. Some of their work has been with white ware bodies, and the theories presented have seemed in accordance with some of the results of this work, hence they are included in the following references.

E. E. Gorton² notes that a body high in clay substance does not shiver.

H. R. Griffen³ found that the addition of a siliceous clay to a body would cause shivering and that the addition of a feldspar to such a body would overcome the trouble. In his opinion, "shivering originates as a body failure and that the subsequent glaze shiver is a secondary reactionary consequence of the body failure." He also claims, "that while

shivering and crazing are the results of strains set up due to a difference in the expansion coefficients of the body and glaze, the expansion coefficient of the glaze is always the greater. The relative strength of the body and glaze determines which shall appear, shivering occurring when the body is the weaker." He further states as his opinion, "that there are two conditions of standing between the body and the glaze, the first in vitrified bodies due to the coefficients of expansion, being brought so close together as not to produce a strain in excess of the elastic limit of the body or glaze; and the second, in porous bodies, where, while the strain is great, the powers are balanced, the factors being the relative strength and the elasticity of the body and glaze."

In the discussion¹ it was the opinion of some that shivering in terra cotta bodies was produced by sulfates in the clay and grog.

M. A. Coates² caused shivering to occur in a terra cotta body by the addition of a soluble salt. The degree of shivering was the same for either a small or large addition of the salt. The addition of a fixer such as barium carbonate overcame the trouble.

R. H. Minton³ found that the introduction of as low as 5 per cent of flint to a non-shivering terra cotta body, caused shivering to take place, and that shivering increased with further additions of flint.

The chief points brought out by previous investigators are the following:

- (1) Shivering can be produced in non-shivering bodies or clays by the addition of a siliceous clay or ground flint.
- (2) Shivering can be produced by the addition of a soluble salt to non-shivering body or clay.
- (3) Shivering can be overcome by the addition of feldspar to the body.
- (4) Bodies high in clay substance do not shiver.

In making the tests described later, all clays were ground to pass a 10-mesh sieve. Bodies were made by volume parts rather than by weight so as to follow factory practice. Bodies were pugged by hand to the consistency of the regular terra cotta body. Test pieces of the shape shown in Fig. 1 were pressed in a plaster mold. This shape of piece was used because it has been our experience that shivering occurs mostly on 45 degree bevel edges and on drove or tool finish. After removing from the mold, the pieces were finished and dried. Then the test pieces were sprayed with three coats of

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¹ Terra Cotta Division, St. Louis Meeting, Feb. 28, 1922.

² Trans. Amer. Ceram. Soc., 1, 84 (1899).

³ Ibid., 2, 135 (1900).

¹ Trans. Amer. Ceram. Soc., 9, 520-27 (1907).

² Ibid., 16, 162 (1914).

³ Ibid., 17, 310 (1915).

a white matt glaze which had shivered badly in factory use. The pieces were fired in a commercial terra cotta kiln to cone 3 starting.

Formula of White Mat Glaze:

0.166 KNaO	}	0.2029 Al ₂ O ₃ (1.57 SiO ₂ + 5% SnO ₂)
0.005 MgO		
0.412 CaO		
0.417 ZnO		

Preliminary Tests.—Five Colorado clays, which we were using or had used, and one Indiana clay, which we knew to be successfully used in some other terra cotta plants, were each made into two bodies—one of six parts clay and four parts grog, and the other of the clay alone. Table I gives the analyses of these clays.

Table I

	A	B	C	D	E	F
SiO ₂	57.7%	68.7%	72.8%	66.1½	66.7%	51.5%
Al ₂ O ₃	26.6	18.2	15.9	19.8	18.3	32.9
Fe ₂ O ₂	1.7	2.0	2.6	2.1	2.3	1.4
TiO ₂	n.d.	0.7	0.4	0.5	0.8	0.1
CaO	0.1	1.4	0.7	1.0	1.6	0.8
MgO	0.8	0.6	0.6	0.5	1.2	0.4
KNaO	2.9	1.8	2.6	2.7	3.0	1.1
Ign. Loss	9.5	6.8	5.1	7.5	7.1	12.3
Total	100.3	110.2	100.7	100.2	101.0	100.5

Key to Table I:

- A. A buff dense burning Indiana clay.
- B. A fairly plastic buff burning Colorado clay, having a sandy feel.
- C. A fairly plastic buff burning Colorado clay, having a sandy feel.
- D. A very plastic buff burning Colorado clay.
- E. A very plastic buff burning Colorado clay.
- F. A very plastic white burning Colorado fire clay.

Results.—Bodies made with clays A F did not shiver, while those containing D and E gave only slight indications of shivering, and bodies from B and C shivered badly. Bodies made without grog shivered worst. For further study, clays A and B were chosen from the above group in order that a comparison of a non-shivering clay and a badly shivering clay (under conditions at hand) might be made.

Bodies of the composition shown in Table II were made up to determine the effect of different sized particles of SiO₂. White silica sand and flint were used raw and calcined (cone 3) in this and another series but no difference was noted in the effect of either, hence only one series is shown. No attempt is made to determine any limits in this work and consequently all results are of a qualitative nature rather than quantitative.

Table II.

	1	2	3	4	5	6	7	8	9
Clay A	6	6	6	6	6	6	4	4	5
Grog	4	4	4	4	4	4	—	—	—
Sand (10 M.)	—	1	2	3	—	—	—	—	—
Sand (20 —)	—	—	—	—	—	—	6	—	—
(40 M.)									
Sand (150 M.)	—	—	—	—	—	—	—	6	—
Flint (200 M.)	—	—	—	—	1	2	—	—	5

Results.—Bodies 1, 2, 3, 4, and 7 showed no indications of shivering. Bodies 3, 4, and 7 are very porous and open. Bodies 5 and 6 show slight shivering, and bodies 8 and 9 are badly shivered; No. 9 being the worst.

Because the bodies (n Table II) containing coarse silica particles did not shiver, the series shown in Table III was

made to ascertain the effect of coarse silica, if added to a body that was known to shiver.

Table III.

Clay B	6	6	6	6
Grog	4	4	4	4
Sand (10 M.)	—	1	2	3

Results.—Body No. 1 shivered badly and the others much less, No. 4 showing only slight indications of the trouble. As the percentage of sand increased, the body naturally became more porous.

Previous to the last outbreak of shivering, the clay storage yard was filled with about three feet of flood waters. The water had swept over the salt coated grounds of a nearby chemical works. That some of these salts were left in the clay and grog when piles dried out, has been established by analysis. The following tests were made to check the theory of soluble salts in terra cotta bodies, as being the cause of shivering. Fifty pounds of each of the clays and grog used in the body was soaked in a tub of water for four days, with occasional stirring. The water was evaporated down to a few gallons in each tub and then siphoned off. The waters from the different tubs were then put in one container and the bulk evaporated until about 1200 cc. was left. This water was used in the tests as indicated in Table IV.

Table IV.

- 1. Clay A + Water No. 1
- 2. Clay A + Water No. 2
- 3. Clay A + 2% Na₂SO₄ + Water No. 1
- 4. Clay E + Water No. 1
- 5. Clay E + Water No. 2
- 6. Clay E + 2% Na₂SO₄ + Water No. 1
- 7. T. C. Body + Water No. 1
- 8. T. C. Body + Water No. 2
- 9. T. C. Body + 2% Na₂SO₄ + Water No. 1
- N. B.—Water No. 1—Artesian well water.

Water No. 2—Concentrated leachings.

Bodies 3, 6 and 9 were covered with a heavy coat of salt when dry. Most of this salt was brushed off before applying the glaze.

Results.—Bodies 1, 7 and 8 did not shiver. Body No. 4 shivered slightly, as in the preliminary tests. The effect of the amount of salts present in Body No. 8 was probably not great enough to cause shivering to take place. Bodies 2, 5 and 9 shivered slightly, No. 5 showing a bit more of the trouble than No. 4. Bodies 3 and 6 showed a greater degree of shivering than any of the others in this series. Increasing the amount of barium carbonate used in the body, and one other change mentioned later, has entirely eliminated shivering from our body.

Shivering in white ware has been eliminated by the use of feldspar in the body, but such practice is generally out of the question with terra cotta manufacturers because of the cost. However, to investigate the properties of the feldspars and a rock having a high feldspathic content, the following tests were made.

Table V.

- 1. 4 parts Clay B + 1 part ground K₂O feldspar (Maine)
- 2. 4 parts Clay B + 1 part ground Na₂O feldspar
- 3. 4 parts Clay B + 1 part ground K₂O feldspar (Colorado)
- 4. 4 parts Clay B + 1 part ground Felsite
- 5. 3 parts Clay B + 2 parts Felsite (10-40 M.)
- 6. 3 parts Clay B + 2 parts Felsite (150 M.)

Results.—All of the above bodies, except No. 5, were free from any indication of shivering and No. 5 was not very badly shivered. The feldspar and felsite undoubtedly acted

as a flux, because the body produced was much harder and more glassy, than one made from Clay B. The feldspar or felsite in the terra cotta body have overcome all shivering action produced by the presence of Clay B or other shivering clays.

Felsite is a light greenish gray rock, not as hard but tougher than feldspar. It develops some plasticity when ground fine, and burns to a hard glassy body at cone 3. It has been used in our terra cotta body for the last nine years. Previous to this work, it had been ground in a dry pan with the clays and grog of the body. It was then found in the body in particles about the size of grog. As shown in Bodies 5 and 6 of Table V, the finer the material is ground the more effective it is in eliminating shivering. The felsite is now ground in a separate mill before adding it to the body and the use of this finely ground material has entirely eliminated shivering. Felsite also aids in drying as it has a low drying shrinkage and does not warp in drying. The addition of too much felsite will cause warping in the firing process.

Analysis of felsite: SiO_2 , 71.5%; Al_2O_3 , 15.4%; Fe_2O_3 , 2.0%; TiO_2 , 0.5%; CaO , 0.8%; MgO , 0.4%; KNaO , 7.6%; lgn. loss, 2.1%; with a total of 100.3%.

A microscopic examination of some of the clays and bodies previously noted brings forth the following data:

Clay A (raw). Contains less free quartz than Clay B. Contains considerable mica, presumably muscovite.

Clay A (to cone 3). Body shows more glassy material than Clay B (to cone 3). Quartz not in solution.

Clay B (raw). Contains considerable free quartz and some hematite.

Clay B (to cone 3). No appreciable amount of quartz has gone into solution. Hematite still present.

Body No. 6 (Table V). Felsite has gone into solution with the clay and formed a bond around the quartz grains, which do not seem to have been taken into solution.

It was then thought advisable to make up the bodies shown in Table VI. This was done to see if the size of grog particle had any influence in causing shivering or eliminating it.

Table VI.

	1	2	3	4
Clay A	6	6	-	-
Clay B	-	-	6	6
Grog No. 1	4	-	4	-
Grog No. 2	-	4	-	4
Grog No. 1—10-40 Mesh.				
Grog No. 2—100 Mesh.				

Results.—Bodies 1 and 2 did not shiver. Body No. 3 shivered slightly, while Body No. 4 was badly shivered, in fact the latter was much worse than a body containing unsized grog.

No effort has been made to check the statement that bodies high in clay substance do not shiver. However, the clays that did not shiver in the preliminary tests, were those having a high Al_2O_3 and low SiO_2 content, which would indicate that the clays were high in clay substance and low in free silica. Whether any clay, having a similar analysis, would not shiver under identical conditions, is problematical.

The foregoing tests and results obtained would indicate that finely divided silica in the body or clay will cause shivering and that large particles, in a corresponding amount, reduce the shivering tendencies of the body and clay. We could also expect that siliceous clays, when used in a body, will undoubtedly promote or cause shivering. Fine particles of inert material, such as grog, seem to have an action corresponding to that of fine particles of silica, though to a lesser degree. Since a good many grogs used by terra cotta

companies are of siliceous nature, it is possible that only the finely ground siliceous particles have any effect. The use of sand or a sized grog (say 10-60 mesh) will tend to overcome shivering according to the results obtained in this work, but the body is made more open and porous. The writer has heard of one company which uses sand to eliminate shivering from their terra cotta body, but because the resultant body is open and porous, such practice is questionable.

Results also indicate that the use of a flux such as feldspar or felsite will overcome shivering that is caused by fine particles of silica. Whether clays, with a high feldspathic or fluxing constituent, will act in a similar manner, is a point that might be investigated. Incidentally, there are a number of rocks of the felsite type which could probably be used in a terra cotta body to overcome shivering troubles.

Clays that have become quite dense and glassy at cone 3 have shivered badly under the conditions used in this work, and likewise open burning clays have done the same. Whether the use of a flux in the body, or the use of coarse material such as sand and grog, have any effect upon the coefficient of expansion of the body, has not been determined.

The results obtained in the work covering soluble salts agreed with that of previous investigators. It is almost conclusive that soluble salts in the body will cause shivering, not to mention other troubles that can arise. However, the use of barium carbonate has been quite effective in overcoming such troubles.

Through results from experiments, it is our opinion that the thickness of the glaze coat does not seem to have any connection with shivering. We have also found that a body with a tendency to shiver is more apt to shiver when subjected to a long firing period. No investigation has been made upon this point.

Summary.—The results of this work indicate that shivering in terra cotta bodies is caused or promoted by one or more of the following:

1. The presence of a highly siliceous clay in the body.
2. The presence of considerable finely ground grog of a siliceous nature.
3. The presence of soluble salts in the clay, grog, or in the water used for tempering.

Three methods of eliminating shivering in terra cotta bodies, if caused by one of the above, are suggested by this work and that of others. They are as follows:

1. Shivering caused by the presence of siliceous material in the body may be overcome by the use of,

(a) feldspar, felsite, or rock having a similar composition, making the body more dense, i. e., use a flux in the body.

(b) coarse sand or grog, making the body more open.

2. Shivering caused by soluble salts can be eliminated by the use of barium carbonate.

The writer wishes to extend his thanks to Mr. George P. Fackt for many suggestions in carrying out this work, and to Mr. Hobart N. Kraner for making the microscopic examinations.

Denver Terra Cotta Co.,
Denver, Colorado.

KNEW FROM PERSONAL ACQUAINTANCE.

An army mule at one of the cantonments died. The private who had charge of the last rites had to fill out the regulation forms, and came across the suggestion, "Disposition of carcass."

After a moment's thought, Sammie wrote on the blank line, "Mean and deceitful."



BIRDSEYE VIEW OF THE INTERESTING BRICK AND TILE PLANT

THE TRI-CITY BRICK COMPANY—ITS PLANT AND PRODUCTS.

AS THE NAME IMPLIES, the Tri-City Brick Company represents a great trinity; Carbon Cliff, Rock Island and Chicago. The plant is located at Carbon Cliff, Ill., the main office is at Rock Island, Ill., and the chief market for the product is Chicago, where the "Apex" Face brick is gaining in popularity because of its remarkable coloring and texture. Another and quite important factor is the railroad facilities, wherein is another trinity, as the plant is located on three lines, viz., the C., R. I. & P., C. B. & Q., and C. M. & St. P. railroads. The capacity of the plant is 15,000,000 per annum, and this may readily be increased if market conditions warrant expansion.

The plant is operated by an expert and experienced or-

ganization which has gained for itself an enviable record among the clay products manufacturers of the Middle West. The officials are F. K. Rhoads, president; C. J. Mueller, vice-president; J. L. Buckley, secretary-manager; C. A. Beers, treasurer. "Joe" Buckley needs no introduction to the trade, for in years past he was actively interested as a plant manager and salesman, and registered marked success. He admits however that the quality of the Apex face brick is the key to their success. A recent visitor to the plant who is well informed in such matters remarked, "You are manufacturing the best brick that has ever been produced west of Ohio." "Joe" admits the fair allegation. The present sales organization is headed by C. W. Pulver, who is ably aided and abetted by E. A. Anderson and Earl Braumiller.

Carbon Cliff is noted as a clay center, the clay and shale are exceptionally high class and with same they have extensive deposits of fire clay. They have two hundred acres of



THE REMARKABLE CLAY AND SHALE DEPOSIT OF THE TRI-CITY BRICK



OF THE TRI-CITY BRICK CO., LOCATED AT CARBON CLIFF, ILL.

these clay deposits which are underlaid with a four and a half inch vein of coal. As they are now operating, the clay bank is about 100 feet in depth. Last March the plant was overhauled and rebuilt to a large extent. Formerly the output was hollow tile and drain tile. The clay and shale is run through dry pans, one Frost, and one American. An entirely new Freese combination brick machine and cutter was installed, and automatic feeder. The machinery was all reset, the steam plant discarded and an electrical equipment installed throughout. The brick are dried in a Rodgers waste-heat dryer which is wholly adequate for their demands in that direction.

To facilitate the work and increase the output, the directors at a recent meeting ordered the construction of several new kilns. They will start this work with two down draft kilns and two large direct angular up-draft kilns, having a capacity of 200,000 to 250,000 brick each. They will be used

for the production of common brick for which there is a large demand locally.

Carbon Cliff is located just eleven miles from the main office of the company and in addition to the railroad facilities there is a good permanent paved highway which will enable them to deliver by truck. They have just purchased a fleet of trucks and at once put into service one 1½-ton Republic truck, two 2-ton all American trucks, and one 3-ton Clydesdale truck. With the new equipment they will increase their daily output to 70,000 brick per day.

Their working force was augmented recently by the addition of Mr. Frank Whiting as plant superintendent who for seventeen years previously served in that capacity with the Streator (Ill.) Brick Company. His long experience and success insured the continued production of high grade brick and tile.

In addition to the Freese machinery, they have two Brewer



COMPANY, NOW BEING WORKED TO A DEPTH OF ONE HUNDRED FEET.

hollow ware machine and cutters, so any time conditions warrant, they can turn all parts of their production over to hollow ware. Another year Mr. Buckley considers dividing the product equally between brick and hollow ware. They are at present making 40,000 brick per day and are sold ahead to the extent of 3,000,000 brick or more.

The offices of the company in the Robinson Building, Rock Island are most conveniently arranged, and visitors are assured of a hearty welcome always either at the office or the plant.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and other southern Indiana towns were quite active during the month of August in spite of the railroad strike that brought with it a car shortage, which at this writing, is becoming more threatening every day. The permits issued by Edward C. Kerth, city building inspector at Evansville during the month of August showed a large gain over the permits issued during the corresponding month of last year. There is considerable building going on and in many of the towns in southern Indiana most of the building this season has been residential. It is believed that building will continue active until cold weather sets in. Brick manufacturers report that this has been a good season for them and a great many brick has been shipped from Evansville to points in Indiana, Illinois, Kentucky and even in states farther away. The manufacturers say that the volume of business has been as heavy as they had expected. Tile manufacturers report that they too have had a very good season; in fact they have no room to complain and are expecting business to continue active the balance of the year. The volume of trade has been much larger than it was last year. The car shortage is interfering some with shippers but it is not believed the situation will grow much worse as the opinion prevails among the manufacturers in this section that the railroad shopmen have lost their fight and that the railroads are going to be able to operate their trains on better time from this time on and that the car shortage situation instead of growing worse will get better in the near future.

Brick and tile manufacturers in southern Indiana towns are convinced that they will be forced to pay exorbitant prices for coal during the coming winter. While most of the southern Indiana mines have been operating since the strike was called off some weeks ago, a few of the large mines have been forced to run on short time due to the fact that they have been unable to secure enough cars. And again consumers are slow to buy coal at this time as they feel the price asked is too high. Operators and mine owners say that people wait too long to buy coal; that there is bound to be a shortage when cold weather sets in and that the price probably will be higher then than it is now. People in southern Indiana were accustomed to get coal before the world war for 7 and 8 cents a bushel and in some instances it could be secured more cheaply than this for manufacturing purposes. Now coal is 23 and 24 cents a bushel and indications are it will go higher unless the government can devise some ways to stop the advance in price.

Aaron M. Weil, head of two of the largest pottery plants in Evansville, is expected home in a short time from Atlantic City, where he and his wife have been spending the summer months. Mr. Weil has written his friends here that since going east he has greatly improved in health.

L. A. Folsom, president of the Industrial Brick Company at Boonville, Ind., who was in Evansville a few days ago on business, has reported that trade conditions in his section have greatly improved since the opening of the coal mines. He says he is looking for a very good fall and winter trade, in fact, some improvement over last year is looked for.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company of this city, has returned from Chicago, where he attended the board meeting of the American Face Brick Association.

John Andres, secretary and treasurer of the Standard Brick Manufacturing Company at Evansville, is a member of the city water works board of Evansville and since he accepted this position several years ago, a great many improvements have been made in the service.

Henry C. Kleymeyer, president of the Stanra Standard Brick Manufacturing Company and president of the Evansville Chamber of Commerce, announced a few days ago that the Chamber of Commerce will organize a "holding" company to take over some land on the river front at Evansville on which will be built a river and rail terminal. Mr. Kleymeyer obtained an option on the land some time ago and it is his plan to have the Chamber of Commerce take over the land and after this is done plans will be determined upon to erect the terminal at a cost of something like \$300,000. The manufacturers and shippers of Evansville are interested in this suggestion as they feel with the completion of the locks and dams along the Ohio river that there will be a big increase in business on the river.

Brick manufacturers at Tell City, Ind., and Huntingburg, Ind., report that they have enjoyed a very good business this year and that they are looking for trade to continue brisk the balance of the year.

Clarence Schutz, president of the Best Brick Manufacturing Company at Evansville, reports business good.

A HOOSIER.

MANTEL AND TILE MEN MEET IN CONVENTION AT MILWAUKEE.

"A general building boom all over the country has caused such a demand for tile that manufacturers have had difficulty in getting raw materials and there are not enough men to install the work," according to E. P. Butler of the Grier & Butler Co., Milwaukee, National President of the Tile and Mantel Contractors at the annual convention of the Central District Tile and Mantel Contractors which was recently held at the Pfister Hotel, Milwaukee. Seventy-five delegates from the middle western states attended the convention, which was purely an educational meeting. The sessions were addressed by George Esp, representing Robert Rossman Co., of New York; F. D. Updik, president of the Central District Tile and Mantel Manufacturers' Association; F. S. Keating of Minneapolis, secretary of the Central District Association, who in discussing the tile business said, "The tile business has not recovered from the post-war slump. The cost of building is so high that builders refrain from adding any decorative features to their buildings. This naturally results in lack of business in the tile industry. However, we anticipate a reduction in prices of tile and labor costs and we may look for prosperity in the tile industry." Mr. Keating said that there are only 400 tiling contractors in the United States.

The annual election of officers resulted as follows: James T. Flower, Akron, Ohio, President; Randall E. Martin, Detroit, Vice President; F. F. Keating, Minneapolis, Secretary and Treasurer. Dana Pinkerton, Cincinnati; Joseph D'Earth, Muskegon, Mich., and Walter Stuart, Milwaukee comprise the board of directors.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



ANNOUNCEMENT of transportation priority and car release for brick and other building material by the Interstate Commerce Commission, even though delayed somewhat, came in season to prevent what is conceded would have been a disastrous "tie up" of the nation's construction program. With many of the principal brick manufacturing centers face-to-face with a fuel famine, and the uncertainty of transportation of brick when produced, the outlook at the beginning of September was anything but favorable.

The status of conditions in the brick-making industry and building operations generally was laid before the Interstate Commerce Commission on August 25 in no uncertain way by the representatives of the Associated General Contractors of America, especial emphasis being placed not only on the urgent necessity for adequate coal supplies, but also the immediate need for rail priority for building brick, the contractors' committee pointing out that at that moment building operations on many of the largest projects in New York City, Boston, and the central eastern states were practically at a standstill owing to inability to secure brick. The immediate requirements for other building materials in all parts of the country were also explained to the commission. The contractors, in presenting their petition, pointed out that over 1,500,000 men are now actually employed in construction work east of the Mississippi river on projects totaling \$1,700,000,000, and that 11,000,000 persons are dependent for their support on the wages of these workers.

After due consideration the commission issued an order directing that 34,000 open-top freight cars be immediately released by various railroads for the exclusive use of shippers of brick and such other building material as is required to maintain all construction work now under way, with the suggestion that new projects not yet inaugurated be deferred for the present. The commission made the further statement that if, within the next thirty days, additional cars and increased priority privileges are needed such will be granted.

The Bureau of the Census has furnished the Washington office of "The Clay-Worker" with prevailing prices on common brick in forty-six cities on August 15. The prices given are for brick "delivered on the job," per 1,000:

St. Louis	\$14.50	Kansas City, Mo.	\$16.50
Grand Forks	18.50	Aberdeen	16.00
Shreveport	15.00	San Antonio	14.00
Tucson	12.50	San Jose	19.00
Portland	19.50	Seattle	20.00
Spokane	13.00	Boston	22.00
Fitchburg	18.00	Haverhill	25.00
Fall River	24.00	New London	17.12
Albany	25.00	Buffalo	18.12
Niagara Falls	21.00	Poughkeepsie	18.00
Newark, N. J.	24.00	Scranton	25.00
Camden	17.00	Baltimore	20.00
Richmond	18.00	Norfolk	17.00
Fairmont	24.00	Columbia	12.00
St. Petersburg	18.00	Savannah	13.50
Detroit	16.50	Saginaw	12.50
Bay City	13.00	Chicago	11.00
Milwaukee	12.00	Des Moines	16.00
Waterloo	18.90	Pittsburgh	16.00
Council Bluffs	16.50	Akron	16.00
Cleveland	16.00	Youngstown	14.55
Lorain	24.00	Toledo	15.00
Dayton	17.00	Indianapolis	16.00

The Department of Agriculture's Bureau of Public Roads has completed the distribution of over 200 carloads of brick, which were included in the surplus war materials of the War Department. About 100 carloads of these brick are suitable for road paving, and the balance for various building purposes, conduits, etc. All were distributed to such state highway departments as requisitioned them. The supplies were shipped from Watertown, Mass.; Schenectady, N. Y., and Dover, N. J.

Danger of Fake Brick.

According to construction authorities here, the use of some of the "freak brick" now being placed on the market at various points in the eastern states will result in exceedingly unsafe and dangerous buildings, and should not be permitted. That these substitutes will not stand up under any kind of ordinary usage is pointed out here.

In contrast to standard brick, these "imitation" brick, which are made of almost anything that comes handy—even of sawdust and cinders, held together with various types of cementing substances, are now appearing in many places where there is a scarcity of real brick or where unscrupulous builders can be tempted by a low price into using them. They have the same size and form as the genuine brick, but right there the resemblance ends. Especially in localities where the building commissioner is primarily a political appointee and not a trained engineer, these brick might be accepted, and to the imminent danger of the community.

Some of these so-called "brick" made of cinders and lime were recently tested here, and among other things, the following were found: That an average pressure of only 682 pounds was necessary to break one in half when supported at both ends, a real brick requiring a pressure of 2,252 pounds to break it. The imitation brick also showed such a great liking for water that they absorbed more than 28 per cent, and two specimens out of six swelled and bulged and developed wide cracks during immersion.

The Department of Commerce reports a steady increase in production, sales and stocks of clay fire brick and silica brick for the month of July, as compared with those for June, are far exceeding those for July, 1921. Following are the department's figures:

	July, 1921	June, 1922	July, 1922
Clay Fire Brick:			
Production	21,909,000	48,367,000	47,266,000
Shipments	21,587,000	45,772,000	45,851,000
Stocks, end of mo. .	142,604,000	153,517,000	158,236,000
New orders	16,851,000	57,805,000	55,681,000
Unfilled orders	29,629,000	56,861,000	67,557,000
Silica Brick:			
Production	1,847,000	11,578,000	11,332,000
Shipments	3,150,000	10,676,000	12,533,000
Stocks, end of mo. .	41,507,000	38,744,000	37,572,000

ALTHOMAR.

TO DETERMINE THE COMMERCIAL VALUE OF FLORIDA CLAYS.

Professor Olin G. Bell, of Cornell University, is now in Florida calling on the various Chambers of Commerce in sections of that state to arrange for the forwarding of samples of Florida clays to Cornell, with a view to conducting a series of experiments to determine the possible commercial value of Florida clays. It is the opinion of many Florida business men that these clays can be successfully used in the manufacture of brick, tiles, pottery, etc., and expansion of these industries is looked for within the next few years in the event Professor Bell's experiments result satisfactorily.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

THE FRUIT OF CHEAP PRICES.

NO MATTER WHETHER it is brick making, in hollow tile, or in sewer pipe, or drain tile, the fruits of price cutting competition which leads to a price level below fair profits almost invariably lead to a lowering of the quality of the products and all the attendant loss of prestige and good standing.

We have had more specific complaints of this kind during the year in connection with hollow building tile than with any other clay product. This is the direct result of an orgy of price cutting early in the year among manufacturers of tile competing for business. It is claimed that some manufacturers made light weight tile and in some sections this has gotten the whole industry in an unfavorable light before city building departments and architects and has led to a closer scrutiny of tile offerings and a general tightening up that makes a situation or condition that never should have come about in the hollow building tile industry.

The fruits of unfair competition and of bad practice are generally bitter, and the outcome of any sharp competition on a price cutting basis is a letting down of quality in products which injures the reputation not only of individual manufacturers but of the industry as a whole. Let us strive to shake ourselves free from things of this kind, and to remember that fair prices are essential to the steady furnishing of a good product and the maintenance of fair wages.

THE IMPORTANCE OF MAINTAINING STANDARDS.

ALL OUR WORK of setting up standards and specifications has a large element of waste in it unless the industry as a whole lives up to these standards and uses them regularly in business. Moreover, we have reminders every now and then of the importance of full compliance with standard requirements in the matter of hollow building tile.

Illustrative of this, there comes to hand a story to the effect that in some of our important cities lately, because some manufacturers had furnished hollow building tile not up to the standard weights and specifications, there was a disposition to legislate against tile in building ordinances.

It's a bad business when any one, two, three or half dozen men in an industry are moved by hope of temporary gain to slight their work and turn out a poor product. In other words, try and palm off something that is not up to standard requirements. The right spirit in industry is that which seeks to produce articles that are even above set standards. Indeed one of the cheering things of the clay industry is in that spirit of pride in products manifested by a goodly share of manufacturers. We have men in the

industry who take as much pride in improving the quality of their product as they do in getting better profits from their business.

This is the spirit we should have more of and should cultivate, and at the same time we should be on our guard against any let down which will tend to lower or to discredit standards which have been carefully set up in the industry as a basis for sizes and qualities.

So make it your business if you are a hollow tile manufacturer to see that the standards are maintained in your product. It is essential to your own future welfare as well as to the industry as a whole for every one to be eternally on guard against that disorder in standards and quality which will lead to loss of confidence in the public mind. No temporary gain in profit can possibly make up for harm which will result in turning out a product below the standard in quality and there is no excuse or reason for turning out a product that does not comply with standards as to shapes and dimensions. Therefore, the first order of the day in the hollow building tile industry should be that of religiously maintaining standards.

SPECIFICATIONS FOR HOLLOW BUILDING TILE.

THOSE IN CHARGE of the work of the Hollow Building Tile Association are exerting themselves diligently to induce all the architects of the country to use the association specifications in connection with the standard weights for hollow building tile. Both the weights set forth as standard and the specifications developed through the work of the Hollow Building Tile Association are fair to both producer and consumer, and their general adoption by architects and builders on the one hand, and the general adherence to them on the part of the hollow tile manufacturers on the other hand, will do much to simplify the matter of building codes and restrictions which are sometimes encountered in the rounds.

The specifications for hollow building tile are as follows:

"Hollow tile shall be uniform, straight, free from objectionable cracks and be manufactured in such a manner and burned to such a degree of hardness that it will have an average absorption of not over 12 per cent and develop an average crushing strength of not less than 700 pounds per square inch of gross area when designed to be laid with the cells horizontal and when tested in that position, and 1,200 pounds per square inch of gross area when designed to be laid with the cells vertical and when tested in that position.

"Smooth face tile or other tile for use in exterior walls without stucco finish should be specified to have an absorption of not over 10 per cent.

"Tile for use in foundation walls in saturated soil or where

constantly subjected to subsurface water and the action of frost should be specified to have an absorption of not over 8 per cent."

The standard weights which go along with these specifications as revised of June 16, 1922, are as follows:

Serial No. 22
Revised January 20, 1920
Revised October 20, 1921
Revised June, 16, 1922

Schedule.

Giving Dimensions, Weight, Etc., for Hollow Building Tile Association "Standard Tile"

Light Weight Partition, Furring and Backing-up Tile

Dimension	No. of Cells	Scoring depth X spacing	Standard Weights
Partition		(See foot note)	
* 2 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	14
3 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	16
4 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	18
* 5 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	20
6 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	22
* 7 x 12 x 12	3	$\frac{1}{8}$ x 1 in.	25
8 x 12 x 12	4	$\frac{1}{8}$ x 1 in.	30
* 9 x 12 x 12	4	$\frac{1}{8}$ x 1 in.	33
10 x 12 x 12	4	$\frac{1}{8}$ x 1 in.	36
12 x 12 x 12	4	$\frac{1}{8}$ x 1 in.	40

Split Furring

* $1\frac{1}{2}$ x 12 x 12	3—2	$\frac{1}{8}$ x 1 in.	8
2 x 12 x 12	3—2	$\frac{1}{8}$ x 1 in.	9

Backingup Tile

4 x 5 x 12	1	$\frac{1}{8}$ x 1 in.	9
8 x 5 x 12	2	$\frac{1}{8}$ x 1 in.	16
8 x 5 x 12	3	$\frac{1}{8}$ x 1 in.	18

Loadbearing Wall Tile

* 3 x 12 x 12	3	$\frac{1}{4}$ x 2 in.	18
4 x 12 x 12	3	$\frac{1}{4}$ x 2 in.	20
6 x 12 x 12	6	$\frac{1}{4}$ x 2 in.	30
8 x 12 x 12	6	$\frac{1}{4}$ x 2 in.	36
10 x 12 x 12	6	$\frac{1}{4}$ x 2 in.	45
12 x 12 x 12	9	$\frac{1}{4}$ x 2 in.	54

slabs optional 1 lb. per 1 in. of width

Book Tile

3 x 12 x 18 or less	2	$\frac{1}{4}$ x 2 in. per sq. ft.	18
3 x 12 x 18 to 24	2	$\frac{1}{4}$ x 2 in. per sq. ft.	18

Note:—"*" These shapes are not stock shapes.

Note:—The standard weights permit a tolerance of 5%.

In other words, they may vary 5% over or under the weights given in this schedule.

FARMERS DON'T STRIKE.

SECRETARY OF AGRICULTURE WALLACE is quoted as saying that the farmer is sick and tired of the bickerings of capital and labor. Also he points out that the farmers of the country, numbering almost a third of our total population, have borne altogether the heaviest burden of deflation and they have endeavored to get relief by lawful means and have never gone on a strike. Newspapers throughout the country, too, have emphasized the point that the farmer never strikes, and is, therefore, the dependable backbone of the nation. In the final analysis the farmer himself fares better in not striking, and it is time for others to come to a realization of this, and to learn how to emulate the

farmer and make the best of the situations that are trying without having strikes and the wasteful consequences that always follow.

EPIGRAMS OF BUSINESS SUCCESS.

"The three arch-enemies of happiness:
Hurry, Worry and Debt."

—Newell Dwight Hillis.

WHEN WE HURRY, we get out of breath, our nerves get frazzled, and we seldom do anything well.

When we worry, we deplete our vital forces and weaken ourselves. We do not get any further ahead on account of worry. On the other hand, we suffer a decided setback. Worry is extravagant and expresses lack of faith of which we should be ashamed.

A business man who is a leader and an organizer, should be able to arrange a schedule which will not call for hurly-burly confusion and nerve-racking strain. Once in a while to be sure, it may be necessary to speed up, but the greater the speed, the calmer the need. Worry is anxiety and concern gone to seed. The wise man will spend his strength making things right and not in weeping because they are wrong.

Debt is an enemy of happiness, if debt is contracted in living beyond one's means. To reach out for what we can not pay for, is childish. To imagine that possessions will make us happy while we are being dunned and chased for the money for them, is foolish. Better a bowl of bread and milk in a cottage, which costs an honest dime, than a banquet to one's friends and an arrest afterward for passing a bogus check.

Debt is assuming responsibilities which we can not discharge. The wise man will make a partner of his wife, and together they will plan household expenses within his power to meet easily, and if she is a good helpmate, she will be glad to assist him to financial independence, even if it means present curtailment, effort on her own part, and some sacrifice.

Assuming a business obligation which good judgment declares is warranted, is a different matter. A large part of the world's business is done on credit, but credit is not necessarily debt in the real sense of the word. Debts which can not be met are haunting specters which drive people to far lengths. The logical and self-respecting thing to do is to avoid debt and worry and the trouble which both bring.

People will often yield to a custom which they can not afford, or go to an expense which they know in their own hearts is not warranted, because they have not the courage to stand up and be conspicuous by doing something different, or perhaps they fear that competitors and neighbors will judge that they are not prosperous, or rumors will be started which will injure their credit.

A great thinker has said that, when he is in doubt what to do, he takes a sheet of paper and on one side writes the strongest argument IN FAVOR of the suggested course, and on the other side, the strongest argument he can marshal AGAINST it. Then, under these captions, he puts minor reasons for and against, and by comparing these and thinking the matter through to the end, he decides which course has the fewer disadvantages and the less likelihood of failure. This course he adopts, forgets the other, and works industriously to justify his own decision.

If many a man did this, he would discover that the thing he feels forced to do, will be attended with more ultimate disadvantages than the honest, straightforward course of avoiding debt and its complications.

To live well, we must be brave and happy—never timid and fearful. It takes courage to be strong enough to do what we ought to do at all times.

MILWAUKEE AND WISCONSIN BRICK AND BUILDING NEWS.



EASTERN REPORTS OF BRICK being a drug on the market come as a surprise to Milwaukee and Wisconsin manufacturers who are pressed for orders. The difference between the two markets can be easily seen when it is shown that in the New York brick market 7,000,000 brick are awaiting sale while in Milwaukee unfilled orders are growing as the fall building boom gets under way. The manufacturers here have not had time "to catch a breath" after the brisk spring and summer booms.

Charles L. Burnham of the Burnham Brothers Brick Co., leading Wisconsin brick manufacturer, in reviewing the condition of the local brick and clay products market declared: "Milwaukee and Wisconsin, in this regard, is in an especially favored position. While eastern markets are complaining of a large surplus of brick and a slack demand due to the stopping of the building activities we are rushed to fill carry over orders from the spring and summer building booms and when the fall building activities start we will be far behind on orders.

"This condition is due to several reasons. The building boom of this year was general. Eastern cities had just as large booms as western towns. The eastern brick plants, however, have a larger capacity than their western brothers and consequently an abnormal rate of production began in those cities early in the spring and they kept up easily with their demand. Western plants, on the other hand, had a large trade to satisfy and they were unable to get ahead of it, consequently they did not pile up any surplus and everything proceeded in a smooth normal course of action, the plants producing brick, the trade consuming the output. Now when fall building starts the western plants will again continue to enjoy excellent business while it will be some time before the eastern plants begin to feel the fall demands due to the large surplus of brick now on hand in their market.

"Again, the eastern manufacturers did not enjoy as brisk a trade as the western manufacturers because high brick quotations tended to check whatever good building intentions that existed in the east. Under normal prices and acting always within reasonable price levels, the western brick manufacturers are now enjoying the fruits of a medium priced market. Building operations were encouraged by sane price levels here and a general good feeling that pervades the market today is due to that cause."

New building constructed in Milwaukee during 1922 will reach a total value of more than \$30,000,000, W. D. Harper, building inspector, estimated recently. "I believe that September and October of this year will show the greatest building boom ever experienced in Milwaukee during these months," he added.

Milwaukee has indeed experienced in 1922 the greatest building boom in her history. It was generally agreed that when the 1921 building figures reached the \$25,000,000 mark it would be hard to overcome. The year to date, however, is already \$7,000,000 in excess of the same record period last year.

A large number of brick residences feature this year's building program, local wholesalers state, and the movement is gaining force in the smaller cities where the average home-builder is now demanding brick because of its coolness in summer and warmth in the winter months, they declared.

The large number of jobs for schools has fallen down in

their monthly average due to fact that this class of construction is over for the year, but the total is made up in new business buildings, churches and public buildings planned for the cities of Wisconsin. An unusual number of apartment buildings are under construction. Chief among the jobs recently let are: Nash Motors Company, factory and office building at Bay View, common brick to Acme Brick Company, face brick to Wisconsin Face and Fire Brick Company; Phillips County Normal Training School, Hydraulic Press Brick Co., Minneapolis; Columbus, Wis., large tourists' pavilion, Ricketson & Schwartz; St. Mary's Hospital, Rhineland, Wisconsin Brick Co., Sparta High School, Louis E. Meir, LaCrosse; Church and Catholic Parsonage, Stockbridge, Wis., to Ricketson & Schwartz, Milwaukee. All of these jobs average about 500,000 brick, estimates show.

Announcement was made this week by officials of the Wisconsin Clay Products Corporation, a \$100,000 company, recently established at Kenosha, Wis., that its new plant located on the Burlington road near Howland avenue was now practically completed and that the plant would start operation within a very few days. Machinery for the plant is now on its way from E. M. Freese & Co., Galion, Ohio, to equip it completely so that it can start to fill orders already received.

The plant will produce face and common brick made from the clay surrounding the plant. It has a capacity of 100,000 bricks a day. Officers of the new company are: Joseph Orth, president; Gotlieb Schaeffer, vice-president; Michael Lauer-sen, secretary; and Charles Tyson, treasurer and superintendent.

Operations at the Stanley Brick Yard, Stanley, Wis., have been discontinued because of the scarcity of coal used to keep the furnaces in operation. Thirty men are affected by the order. The plant usually closes during the winter months and it is expected that with this recent development, the plant will not open until the spring of 1923, officials declared.

The first tile to be manufactured by the Kewaunee Brick and Tile Company, Kewaunee, Wis., is now on the market. The kiln at the company was opened this week. The company is now in a position to make immediate delivery of both tile and brick at its new, modernly equipped plant.

Strikes and scarcity of coal have affected the majority of the brick yards in Wisconsin and neighboring states to such an extent that many of the Badger cities have been compelled to abandon paving and highway construction plans. The latest to be added to the class of cities who will postpone paving contracts on account of inability to secure brick, is Ashland, Wis. This city has made a vain attempt to secure brick after canvassing the yards in the state of Wisconsin, Illinois and Iowa. J. E. Breens, St. Paul, representative of the Streater Clay Manufacturing Company, however, assured city officials that the contractors would be supplied with brick early in September or October. It is thought, however, that at that time, the season will be too late to start operations. An extensive paving program will have to be postponed by the city, it is thought.

A similar condition exists at Madison, Wis., the state capital. Building of houses and business blocks in Madison and Wisconsin may be forced to a standstill, a report from that center states.

"Clay products plants in Illinois and Indiana manufacturing building tile and other materials are shut down for want of fuel and will not be able to open for some time," according to C. H. Patek, state representative of the Northwestern Clay Products Company, who is in Madison. According to Mr. Patek, many essential industries are running out of coal and operations will be delayed indefinitely.

With \$30,000,000 being spent in Milwaukee this year for

building and a continuation of this broad expansion and improvement movement indicated for next year, building interests, especially local brick manufacturers, are taking a keen interest in the fourth annual Household Exposition to be held at the Milwaukee Municipal Auditorium, Oct. 23 to 29. Brick manufacturers, jobbers and wholesalers have all expressed their determination to enter exhibits in the exposition.

A. BADGER.

THE CLAYWORKING SUPERINTENDENT.

THERE IS a distinctly noticeable trend these days toward more specific study and training on the part of foremen and superintendents. This is the natural outcome of the confessed recognition of which we have had quite a lot in the past few years, that the foremen and superintendents constitute a mighty important link in the industrial organization. They are the shock absorbers and the go-betweens of the management and the workers and changing conditions and development of new ideas not only add importance to their work, but they make it essential for foremen and superintendents to seek diligently for all the available information which may be useful to them in their daily work.

We are now getting at some of the brass tacks and practical details of foremanship and the problems which confront superintendents. We have had essays and discourses galore on the manly qualifications essential to good foremanship, but now the foreman and superintendents themselves are beginning to go after specific practical information in a manner that speaks well for their future progress and for the good of industry as a whole.

Perhaps this movement is more noticeable in the wood-working industries right now than in any other of the larger and more wide-spread manufacturing lines. There has long been an organization of logging superintendents, and more recently there has been developed organizations of wood-working foremen and superintendents for the purpose of meeting together regularly to exchange ideas and increase their own knowledge of their business. In addition to discussing questions and problems among themselves they are seeking to call in the counsel of experts in the machinery and supply lines catering to the wood-working industry. And all signs point toward some interesting times and some rapid progress that will much more than compensate for the time and effort spent in gaining more specific knowledge of the business from each other and from others who are qualified to bring them new ideas and fresh information.

The superintendents and foremen of wood-working plants are in better position to do this right now than those of clay-working plants, because there are more of them and it is easier to get a group together once a month or more. In such wood-working centers as Evansville, Ind., where this idea started or any one of a number of large cities it is easily practical to get anywhere from a dozen to 50 superintendents and foremen together almost any evening, and this makes it easy to keep the interest alive and to develop discussion which brings out information.

There is a different situation in the clayworking industry. The plants are, as a rule, more widely separated, therefore frequent group meetings are not so easy to arrange. This is a handicap to efforts similar to those being carried on by superintendents and foremen in the wood-working industry, but this should not prevent superintendents and foremen in the clayworking industry from seeking to develop a friendly and cooperative relationship with each other, nor should it be a bar to their seeking for information from all available sources that will be helpful in carrying on in a more progressive manner the supervision of clayworking plants.

should be practical eventually to arrange both group and national meetings, not so frequent, but once or twice a year, and meantime it should be practical to do some visiting one with the other and to do some exchanging of ideas through the trade papers which pertain specifically to the supervision of the various divisions of the clayworking plants.

The trade papers furnish the greatest medium of exchange in new ideas between the greatest number, and the time is ripe for us to give more space in trade papers to matters of this kind.

For some years now the writings and offerings in the trade papers have probably centered too largely on either business management or matters of particular interest to the individual workers, and have not included enough space given specifically to subjects pertaining to supervision and foremanship. Some trade papers have drifted largely into business problems of general management. Many others go to the other extreme and devote themselves almost exclusively to matters of technical and practical value for the individual worker. All these things hold some interest for the foreman and the superintendent, but they do not entirely fill the bill of his requirements. There should be an exchange of ideas and discussions of the problems and questions of the day with other superintendents and other foremen so that more interest may be centered in and more information garnered on the subject of supervision and foremanship in industry.

This today is probably the most important factor in the industrial world. The great cry of the day is for economy in production that we may have comparatively low prices of manufactured products and at the same time make industries yield a fair profit. The answer to this is to be found in those details of supervision and management which come in the domain of superintendents and foremen. Therefore, the need today is more urgent than ever before for us to get busy on specific lines of thought and study that we may properly advance in knowledge and practice that will put superintendents and foremen in tune with the spirit of the times.

MATERIAL HANDLING.

A REALIZATION that material handling is an important factor in production cost has been dawning on us for some time. Also, we have been steadily making good progress in the invention and use of labor-saving devices for handling material of all kinds. There are enough of these now that one of the interesting studies for those in charge of plant management is that of what equipment will fit in best with the needs and the help most in cutting down manufacturing cost.

Several interesting rules are being promulgated about material handling and among the important ones are these:

1. You should as a preliminary to installing equipment make a study of all the equipment offerings on the market which have bearing on your needs.
2. Analyze the handling you have to do, the quantity and nature of the material, and its routing.
3. Study your own layout in comparison with others so you may chart its peculiarities for guidance in selecting and installing equipment.
4. Buy that which will render the best service in your own needs, not that which can be had at the lowest cost. It is service or performance rather than first cost which should determine the merits of equipment.

And, finally, make it a point to look after and maintain conveyors and other handling equipment just as carefully as you look after your power plant and producing equipment, for conveying equipment, like manufacturing equipment, must be kept in good order to render good continuous service.

SUMMER EXCURSION MEETING OF THE A. C. S.

A Pleasant Week's Vacation in Canada, as Guests of Our Hospitable Canadian Cousins in Montreal, Ottawa, Buckingham, Kingston, Toronto and Hamilton.

A DELIGHTFUL NIGHT ride across Lake Ontario, from Rochester to Kingston, a daylight trip down the St. Lawrence river past the Thousand Islands and through the rapids to Montreal, excursions in launches around the harbor, both at Montreal and Toronto, a real camp dinner near a feldspar quarry in the wilds of Ontario Province, inspection tours through glass plants, brick yards, a paper mill, feldspar quarries, Parliament buildings, ceramic laboratories and a series of well prepared banquets were the high lights of the mid-summer excursion of the American Ceramic Society held August 13 to 19 inclusive.

About fifty members of the Society were on hand to board the steamer "Kingston" at the dock at Rochester Sunday evening August 13. The glad hand committee made every one feel that it was a family excursion, so that Old Man Formality was left behind and the kidders and merry makers had the upper hand throughout the week. In the best sense of the word it was a joy ride from the beginning to the end,



Stock Yard of Building Tile Plant of National Brick Co., Delson Junction, Southwest of Montreal.

no business of the Society was transacted, a few select plants only were visited and the week was given over almost entirely to sight seeing and banquets at which the majority of speakers took for their theme the brotherhood of the two nations represented. The welding influence of such visits greatly strengthens the warm friendship existing between the two English-speaking nations, and the American Ceramic Society cannot help but be benefited by reason of the new friendships formed on occasions of this kind.

Early Monday morning (5 o'clock to be exact) the ceramists were on hand to see the landing at Kingston and to get in on the first call for breakfast after which the entire morning was spent in viewing the great scenic beauty of the upper St. Lawrence river with its thousand, six hundred and some odd islands. At Prescott we changed to the river steamer and soon began the descent of the many exciting rapids, the Lachine Rapids furnishing the grand climax, for the steamer without power ran at a rate of better than thirty miles an hour through a narrow channel, with dangerous rocks protruding out of the swirling rapids on either side of us. We steamed into the peaceful harbor of Montreal with Mt. Royal looming up in the background at 6:45 p. m., Monday.

The delegation was met at the dock by Mr. G. Percy Cole, of the Dominion Glass Co., chairman of the Montreal Entertainment Committee, and escorted to the Windsor Hotel by a

procession of automobiles. The ceramists scattered to the four winds, some preferring a French dinner with a bottle of Sauterne to the usual evening meal.

The ceramists were coralled after some little trouble at 10 o'clock in the Blue Room of the hotel but the name was a misnomer judging from the time enjoyed by all, thanks to Messrs. Cole and Johns, who had ample liquid refreshments on hand to satisfy everybody's whim. This was an informal get-together meeting to talk over the program of the following day.

Early Tuesday morning the ceramists went in groups to the points of interest they had selected the previous evening, the majority making the harbor trip as the guests of the Harbor Commissioner on his private launch. This harbor, the second largest on the continent, was skirted from one end to the other, a landing being made at the municipal warehouse and cold storage plant, the inspection of which proved very instructive.

A second group made an auto trip to the National Brick Co.'s plants, four in all, located about fourteen miles to the southwest of Montreal, two at Delson Junction and two at Laprairie. We first visited No. 4 plant, where terra cotta



The Ceramists "Lookin' Pretty" in Derry Feldspar Quarry, Ten Miles from Buckingham Ontario, Canada.

building tile are made. Eight dry pans are required for grinding the material. Pennsylvania slack coal is used in the burning which requires eight days. The No. 3 plant is used for the manufacture of ordinary plastic and face brick. An immense International machine specially built with steel-cut gears has been in operation here for many years turning out better than 200,000 brick daily. Eleven dry pans are used. The ground material is elevated to the top of the building and screened through piano wire screens, and dropped by gravity into storage bins from which material is conveyed on belt conveyors to the machines as needed. The ware is dried in 24 hours in a 12-tunnel drier, 3 tracks each, 17 cars to the track, and burned in a 32 chamber continuous kiln.

On the No. 1 plant, located near Laprairie, is manufactured shale brick by both the stiff mud and dry press processes. This is the largest clay products plant in Canada, producing about 400,000 brick daily. The equipment of No. 2 plant where ordinary plastic and face brick are made is al-

most identical to that on the No. 3 plant, except that 13 pans are used, the raw material here being more difficult to grind.

The ware made on the four plants of the National Brick Company is of fine quality and is quickly disposed of in the city of Montreal and its environs.

The superintendent L. W. McCarthy showed us over the plants and was content to say good-bye to us only after we had accepted an invitation to eat dinner with him at a little quaint restaurant in the French village of Laprairie the oldest town in Canada. This was a most enjoyable dinner, the food well prepared and the time spent afforded us the opportunity of becoming better acquainted with this genial gentleman and to secure the needed rest after the trip through the four plants. Mr. Chas. Roy, a salesman of the company, graciously motored us to the plants and took us to the Consumers Glass Co.'s plant in Montreal, where we joined the other ceramists at 2 o'clock.

The trip through the gas producer department, the packing rooms, the machine shop, and the bottle making department was very interesting. A temperature of 2450 is required in the preparation of the glass so that the ceramists lingered only long enough to get an eye full. A souvenir wringer would have come in handy. They were operating semi-automatic bottle machines six molds to the machine, turning out 18 bottles per minute on each machine. Six hundred different kinds of bottles are made on this plant, from the large size vinegar and olive bottles down to and including small perfumery and medicine bottles.

From the glass factory some of the ceramists autoed to the Gurney Foundry Co.'s plant where enamelled stoves and signs are manufactured while others paid an English cab-



Camp House in Canadian Wilds, where Ceramists Enjoyed a Real Camp Dinner, Speeches and Fine Songs.

man to drive them up to the summit of Mt. Royal, where we got a fine view of Montreal.

A fine banquet was served that evening at the Windsor Hotel and we were introduced to the French Canadian song *Alouette* easily made into a parody which Messrs. Roberts, Byers, Greer and Scott sprung upon us at almost every opportunity during the remainder of the week's trip. The writer having an upper berth over Roberts on the way to Toronto discovered Roberts even sung it in his sleep.

The president of the King's Council, Mr. Chapman, of the Chapman Engineering Co. and President Riddle were the three speakers of the evening.

Wednesday morning two special cars provided by the Canadian Pacific Railroad carried us to Buckingham, where automobiles were on hand to take us about ten miles back into the mountains, where we inspected the Derry feldspar quarry, owned by O'Brien & Fowler. Mr. N. B. Davis, superintendent of the mine, was our host. After viewing the min-

ing of the unusually pure feldspar, we were escorted to the camp dining hut, where a sumptuous meal was served us in true camp style. A trio of French Canadians, prominent business men of Buckingham, Messrs. E. M. Lapierre, Leo Landry and N. Charette, entertained us with some fine songs, and, of course, *Alouette* cropped out again. Impromptu addresses were made by Dr. M. Lish, Minister of Mines of the Province of Ontario, Mr. N. B. Davis and Messrs. Riddle, Silverman, Frechette, Omannay and Purdy.

On the return trip to Buckingham we were royally entertained at the Palace Hotel until train time, thanks to the proprietor, N. Charette, and the French Canadian singers. Leaving Buckingham regretfully in our special cars we secured a good view of the Lievre River with its cascades. Lumber in great quantity is floated down this river, and, in winter, when the river is completely frozen over, feldspar is transported over same in especially prepared sledges.

On arrival at Ottawa at 5 p. m. we found our rooms reserved for us at the magnificent Chateau Laurier and our baggage was taken en masse from train to hotel. Messrs. Frechette, Keele, Davis and Merkley constituted the local entertainment committee and we are indebted to them for their untiring efforts in our behalf. After the usual tidying up, the ceramists boarded an electric car for Val Tetereau, Quebec, across the river from Ottawa, where a banquet was served at "Ye Old Homestead Inn." Our loquacious quartette con-



French Canadian Carusos Tuning up in Front of Palace Hotel, Buckingham, after Trip to Feldspar Mines.

tinued their rehearsal of the parody on *Alouette*. The banquet was served in fine style with nothing left to wish for. Music and dancing enlivened the occasion.

After the dinner groups of ceramists visited the Victorian National Museum and the Ceramic Laboratories of the Department of Mines.

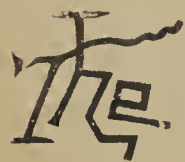
Thursday morning we visited the famous Eddy paper mills, where they manufacture almost all types of paper and products made of pressed paper pulp, including broken arch supports, that look like leather, paper towels, bags, peanut butter and candy buckets, tissue papers, toilet paper, serviettes, matches, match boxes, cartons, tubs, wash boards, etc.

An enjoyable auto ride around Ottawa gave a fine opportunity of viewing Ottawa, its fine buildings with their Gothic spires, well built brick homes, parkways and boulevards, canals and waterways, and the surrounding environs of great natural beauty. At noon our special cars were again boarded, the baggage having been placed on the cars during our absence, thanks to the courtesy of G. G. Omannay of the Colonization and Development Department and A. B. B. Birk, Traveling Passenger Agent of the C. & P. Railroad, both of whom

(Continued on page 286)

Written for THE CLAY-WORKER.

IN THE PHILADELPHIA BRICK MARKET.



DEMAND FOR BRICK in this city is far in excess of the supply, and builders are experiencing much difficulty in going ahead with their operations. Many of the manufacturers announced that they can not supply the demand, and two firms claim they will be able to take care of any orders. Several firms say they will not fill any orders that come in now, and will only take care of those builders who had their orders in.

Commencing September 1, three brick plants of Mount Union increased the wages of all classes of their employes, according to an announcement made by the owners. The Harbison Walker Plant, the largest of its kind in the world, was the first to announce the increase. The General Refractories Company and the United States Refractories followed closely after. Laborers' wages were increased from \$2.75 to \$3.50.

The Standard Refractories Company at Claysburg has been merged with the General Refractories Company at Sproul. Both concerns manufacture fire brick, used extensively by steel and other plants. The deal, in capitalization and holdings, involves more than \$1,500,000. The General Company operates ten plants in different parts of the state. The Standard Company was organized in 1914, with Thomas N. Kurtz of Hollidaysburg as president and general manager.

The main reason for the scarcity of brick is that Philadelphia is now experiencing the greatest boom in its history. The Bureau of Building Inspection has issued more than 11,000 permits for all classes of construction, and naturally about 95 per cent of all construction calls for the use of brick in either large or small quantities. Indications are that the total for this year will reach \$100,000,000. So far permits were issued by the Bureau of Building Inspection for the erection of 16,000 operations to cost about \$75,000,000. All building records within the last decade were shattered, and in several corresponding months of previous years the total was only one-sixth of last month's record total. August values went \$400,000 more than those in July, which was the best July this city ever had.

Dwelling construction, which is heavier than for years, accounts for about 50 per cent of the total. Permits have been granted for more than 7,000 houses of the one, two and three-story type, to cost \$37,000,000. Of the total, 6,500 were for the two-story type. And about 95 per cent of all the houses being erected are of brick construction. Builders think that the year's total will reach 9,000, costing about \$55,000,000.

The coal and railroad strikes have begun to interfere with the building program and it is expected that further evidence of the effects of the strikes upon the building trades will be evidenced shortly when bids are opened for several big projects. Builders have been unable to get supplies and are so far back in their work that some are refusing to submit bids for new work. Because of the lack of coal, the brick that has been delivered at some of the schools being erected by the Board of Education has not been in the kiln sufficient time and does not come up to the required standard. One of the large firms that has been supplying brick to the Board for many years has declined to submit bids because of the unsettled conditions.

The bricklayers' agreement expires in January, and because of the uncertainty in the building trade as to what new agreements can be reached in the face of a scarcity of bricklayers, with the rush of building now in progress,

many contractors are submitting bids 20 per cent higher than six months ago.

With the passing of September will also go the passing of two of this city's most famous and oldest hotels, the Continental and Colonnade. The former's famous splendor is now only a memory, as the old hostelry closes its doors for all time. For more than fifty years it was the stopping place of Presidents, princes and kings. The erection of the hotel followed a public meeting of public-spirited citizens in March of 1857 at the Board of Trade rooms. At that time \$200,000 was subscribed toward the project. The hotel was formally opened February 13, 1860. The demolition of the old hotel is to make way for the erection of a 1,200 room hotel to be known as the Benjamin Franklin. The project has been hanging fire for several years, and now the owners have decided to go ahead with the work. The Colonnade Hotel, also famous for the stopping place of people known the world over, and famous as a hotel during the Civil War, is to be torn down to make way for the erection of a \$4,000,000 office building which will be twenty stories, of brick, steel and stone construction.

A. QUAKER.

NEWS VIEWS OF BRICK.

IN THE EASTERN part of the country news writers have centered considerable attention upon the subject of brick construction generally, largely because the cost of building operations are not yet down to what is considered firm ground. The views of the news writers vary all the way from seeing back of it combinations for profiteering in the brick trade, to investigation and condemnation of imitation brick, brick said to be made of cinders and lime, and incidentally the question of cement brick is brought into the discussion which, it is claimed, can be furnished for \$16.00 a thousand, while the price of good clay brick is around \$22.00. To one familiar with the clayworking industry and following the views and expressions in newspapers where the writers have attempted to penetrate and explain troublous conditions in the building world, it is easily evident that there is lack of understanding and that brick men everywhere should seek to keep in more intimate touch with their newspaper publishers and keep the editors well informed on the exact conditions of the clayworking industry. The clayworking industry on the whole has nothing to conceal, and nothing to lose but much to gain from giving the public a close up view of what is actually going on in the brick industry. There is in it all a reminder that it is a mighty good thing not only to invite the general public to come and see what you are doing, and how you are doing it, but especially to get the editors of papers and the news writers to come and look over the layout now and then and get a better understanding of the real facts in the clayworking industry.

TO MAKE VITREOUS CHINA.

The Whiting-Mead Pottery Co. has been incorporated at Los Angeles to manufacture vitreous china. Officers are announced as Perry Whiting, president; James Simpson, vice-president; James M. Bonner, secretary, and W. H. Mead, treasurer. Three units are said to be planned, which when completed and in operation will give employment to between 300 and 400 operatives and will have a productive capacity of about \$1,500,000 annually. The Russell Engineering Company, of St. Louis, has its engineers on the ground, with the purpose of securing for the new ceramic enterprise the latest and most modern kilns and other improved equipment.

A man can be too modest and retiring for his own good, but most of us are not.

INTERESTING EXHIBIT AT THE EIGHTH NATIONAL EXPOSITION OF CHEMICAL INDUSTRIES.

THOSE WHO are fortunate enough to attend the Exhibition of Chemical Industries at Grand Central Palace, New York City, the week of September 11 to 16, will find one of the most interesting displays, that of Proctor & Schwartz, of Philadelphia, which will be found in space No. 15, on the main floor. The principal feature of the displays are:

A working demonstration of a new continuous filter and dryer adaptable to practically every filterable material. This equipment has been developed through the combined efforts of Filtration Engineers, Inc., New York, designers and manufacturers of filtration equipment and Proctor and Schwartz, Inc., builders of drying machinery. The machine consists of a "FEinc" Rotary Vacuum Filter, a "FEinc" Filter Cake Compressor and a "Proctor" Continuous Filter Cake Dryer, the three units perfectly combined into one completely automatic and continuous process of filtering and drying. Incidentally, the space adjoining that of Proctor and Schwartz, Inc., will be occupied by the exhibit of Filtration Engineers, Inc., enabling interested visitors to take up at the same time and place, the closely related problems of filtering and drying with two experienced, reliable organizations, the one specializing in filtration problems and the other specializing in drying problems.

In addition to the above, Proctor and Schwartz, Inc., will have on display a "Proctor" Truck Yarn Dryer and exhibit other types of "Proctor" Dryers for Textile raw stocks, yarns and fabrics, as well as "Proctor" Machines for drying a vast diversity of other industrial materials—the various machines being represented by automatically projected lantern slides, photographs of installations, etc.

The representatives of Proctor and Schwartz, Inc., who will be present to welcome visitors at this exhibit are D. D. Hollenbaugh, manager New York office, W. H. Rihl, J. F. Moranz, G. W. O'Keeffe, E. C. Faber, T. H. Rhoads and W. J. Dudley. Mr. E. B. Ayres, vice president and sales manager Special Dryer Division and Mr. F. Kershaw, vice president and sales manager Standard Dryer Division of Proctor and Schwartz, Inc., will also be in frequent attendance.

COLOR SCHEMES.

We are indebted to our British Contemporary, The British Clay-Worker, for a copy of an interesting booklet which is profusely illustrated with photographs of buildings erected of late years in England in which glazed terra cotta, glazed brick, faience tile, etc., have been used with fine artistic effect. The book offers convincing proof that architects in England and Scotland are effectively handling the problem of color scheme in building. An insert printed in colors is a work of art worthy of a gilded frame. The book sells for one shilling. Any reader of The Clay-Worker desiring same, will please address H. Greville Montgomery, 30 Fumival Street, Holborn, E. C., London, England.

TREASURER SIBLEY WEDS.

As foretold in the August issue of The Clay-Worker, John W. Sibley, Birmingham, Ala., the popular treasurer of the National Brick Manufacturers' Association, was married September 5, to Mrs. Florence Varner, also of Birmingham. Mr. and Mrs. Sibley are making an extensive trip to the Pacific Coast. Their "at home" cards read "October 15, 2150 Highland Ave., Birmingham." We know hundreds of clayworkers all over the land will join with us in good wishes for Mr. and Mrs. Sibley.

OPTIMISM OR OPTOMISM.

AN OPTIMIST or optomist, as you may please to spell it, as a rule is one who is enjoying success. Our compositor made us spell it with an "O" in the interesting advertisement of the L. E. Rodgers Engineering Co., on page 213 of this issue, but Mr. Rodgers agrees with Noah Webster and spells it with an "I". Spell it as you prefer, it means the same thing, one who has been successful, that is the real difference between an optimist and a pessimist. The pessimist usually is a failure. A PEPTOMIST is a man who puts pep into his optimism. The users of the Rodgers Waste Heat Dryers are always optimists and usually peptomists for a successful venture adds zest or pep no matter what the enterprise. The users of Rodgers Waste Heat Dryers always register success. For verification communicate with the Rodgers Engineering Company direct and be a peptomist.

A CROW MESSAGE.

Those at all familiar with farm life generally agree that crows talk. The editorial desk is now decorated with a jet black crow which does not talk, but brings a message from our associate editor, J. Crow Taylor, of Louisville, Ky., who recently celebrated his fifty-fifth birthday, and sends this miniature crow as a little souvenir of that happy occasion. He is first and last a journalist, but mingles with that work the duty of secretary of the Kentucky Brick Manufacturers' Association, or similar organizations. Mr. Taylor closes his message with the following tribute to his mother:

"To the memory of my mother, Sarah Christian (Crow) Taylor, who named me James Crow Taylor, in honor of her father, James Franklin Crow, and lived to cherish only a few of my childhood years, this paper weight token in the form of a nesting crow, gotten out as a memento of my fifty-fifth birthday, is dedicated. And this is the message of dedication:

'Let us have faith—and seek wisdom for a guide,
'That our works may justify a mother's pride.'"

WHOM DOES A STRIKE BENEFIT?

People may find excuses for strikes, but there is really no logical reason for them when we stop and analyze their results. Both sides to the contention lose, and the public suffers considerably more than anyone benefits. Indeed in the final analysis it is doubtful if anyone benefits from the thing we call a strike.

There are some figures made available which show that of each 100 strikes the employers win 38, employees win 21, while 41 are compromised. The figures and the records of history show that the workers lose more often than they win in strikes. Another impressive thing, not shown in the figures, is that the workers lose their wages during a strike, and industry loses that activity which means profit instead of loss.

If we could get the exact figures on the economic loss to both workers and managers of industries, to say nothing of the inconveniences to the public from strikes this year, it would be appalling and contemplation of this fact should serve as a clarion call, too, that the time is here for us to urge legislation which will prevent strikes.

Surely in this enlightened age it should be practical for us to set up ways and means for adjusting differences of this kind without resorting to strikes and the great waste they involve, and the threat they constitute to the welfare of the public as a whole. It is not enough to say that this ought to be done. It is time for us to get busy and insist that something of the kind shall be done. In the final analysis strikes are no benefit to anyone, and they furnish us such a record of strife and economic waste that the historians of the future will wonder why we permitted them as long as we have.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,424,924. Method of Producing Clay Bodies. Grover W. Rapp, Le Roy, N. Y., patentee.

The method of preparing elastic material for use in the production of ceramic ware, which consists in forming slip, filter-pressing the slip, enclosing the filter-pressed cakes in a receptacle, exhausting the receptacle of air and other fluid, and compressing the filter cakes into a compact mass while retaining the reduced pressure within the receptacle.

No. 1,420,796. Mold for Making Brick. George A. Warner, Detroit Mich., patentee.

Patent for an apparatus for molding or forming bricks or similar articles consisting of the combination of a mold provided with a plurality of compartments and having side walls that are corrugated or fluted and a member having matching corrugations or flutings that can be passed over the mold box to corrugate the plastic bricks.

No. 1,425,302. Building Brick. Bernard F. Weber, Chicago, Ills., patentee.

A composite wall or the like comprising courses of hollow stretcher bricks with corner hollow header bricks all substantially the same size and binder courses of the hollow header bricks, each stretcher and header brick presenting four plane unbroken surfaces, each stretcher brick having a web extending longitudinally therethrough and each header brick having two transverse webs extending from side to side.

No. 1,425,010. Process and Machine for Making Bricks. William H. Haws, Johnstown, Pa., patentee.

The process of molding bricks from brick forming material which consists in supplying a mold with an excess of material, compressing portions of the material near the walls of the mold with greater force than the material removed from said walls while relieving pressure on said last mentioned portion of material, then finally compressing all the material.

No. 1,425,603. Composition for Producing Coatings on Refractory Articles and Articles Coated Therewith. William R. Mott, Lakewood, Ohio, patentee.

As a new article of manufacture, a refractory article provided with a coating comprising an oxy-compound of boron, associated with iron and chromium.

No. 1,426,655. Kiln. Robert T. Kyle, Huntington, W. Va., patentee.

A kiln comprising a tunnel, a series of heat inlets opening into said tunnel at horizontally spaced points along one vertical side thereof only, and a single heat outlet from said tunnel, said outlet being located at the opposite side of the tunnel from said heat inlets and being longitudinally spaced from all of said heat inlets and in substantially the same horizontal plane therewith, whereby to force the heat from said inlets to travel diagonally across the tunnel and through the ware before escaping through said outlet.

No. 1,420,284. Manufacture of Refractory Silica Brick. Orazio Rebuffat, Naples, Italy, patentee.

Patent for a process for the rapid conversion of quartz into its allotropic varieties of lower specific gravity by incorporating therein small quantities of the radicals of acids non-

volatile at high temperature and calcining the same and recovering said allotropic varieties of said quartz of lower specific gravity than quartz.

No. 1,426,287. Kiln With Heating and Cooling Chambers. Victor Gelpke, Lucerne, Switzerland, patentee. Patent assigned to Deutsche Evaporator-Aktien-Gesellschaft, Berlin, Germany.

A kiln, comprising, in combination, a furnace, a heating-chamber, a cooling-chamber, and a compensating-member arranged between said chambers; said member consisting of two sheet-metal plates arranged in an appropriate distance one from the other, and gas-tight connections between said plates, as well as between them and the structure-component's with which they are connected.

No. 1,426,761. Machine for Molding Brick Shapes. Charles L. Norton, Boston, Mass., patentee. Patent assigned to Refractories Machinery Manufacturing Co., Pittsburgh, Pa.

In a machine of the character designated, mold, and a hopper above the mold comprising means adapted to deprive a mold-charge in the hopper of vertical and lateral support substantially simultaneously.

No. 1,427,534. Construction of Hollow Walls for Buildings. Herbert V. Kent, London, England, patentee.

A wall for buildings comprising slabs forming the outside of the wall, other slabs forming the inside of the wall, uprights for supporting the slabs, projections upon said uprights engaging the ends of the outer slabs, bolts projecting from said uprights, clamps secured by nuts upon the bolts for securing the outer slabs to the uprights, spacing means for maintaining the inner slabs in spaced relationship to the outer slabs, and means upon the aforesaid bolts for holding the inner slabs against the spacing means.

No. 1,419,805. Brick Wall Construction. Albert D. Bigler, Clearfield, Pa., patentee.

This patent is granted for a brick building block having a rear vertically straight line, a flat top, a front lower depending projection constituting the lower front terminal of the block and an upper downwardly beveled corner portion at the front, the front side of the block being smooth and sloping downwardly and outwardly from the lower terminal of the upper level to the lower terminal of the projection; a recess formed in the bottom of the block from the rear straight side of the block to and continuing into a beveled rear side of the projection, said beveled rear side being adapted to snugly fit over the upper level.

TRADE-MARK REGISTERED.

No. 160,765. Lancaster Iron Works, Inc., Lancaster, Pa. Trade-mark registered for machines for manufacturing brick.

ALABAMA PRISON CONSTRUCTED OF BRICK.

WHAT IS SAID to be one of the finest and largest brick jobs in the southeast is now being completed at Montgomery, Ala., in the construction there of the Kilby Prison, more than a million and a half brick having been used in the various buildings. B. W. McDuffie, of Montgomery, who was in charge of the brick work, and who is one of the best known brick construction specialists in the South, declared that he considered the Kilby Prison the most beautiful brick job in this part of the country.

The Birmingham Clay Products Co., of Birmingham, Ala., supplied the brick, which is principally red-face brick, laid up in black mortar, scratched out joints one-half inch deep, and jointed. All offices are provided with red six-inch tile floors, laid with a one-half inch black mortar joint.

Written for THE CLAY-WORKER.

DETROIT BRICK NEWS.



NEW CONSTRUCTION in Detroit in August set another high record with a total of 2,647 permits valued at \$13,103,831.00. This has only been exceeded in two previous months, September, 1919, with \$17,343,085, and May, 1922, when the total was \$14,123,100. This August figure will go a long way towards swelling the total for this year, which is fast overcoming the aggregate for previous record-breaking years in this city. There were 2,060 permits for new work valued at \$11,028,031 and 587 for alterations and additions to cost \$2,075,800. These figures compare with 1,162 permits for new work to cost \$4,413,810 and 554 for alterations and additions to cost \$553,085 in August, 1921.

This is an increase of 931 permits and \$8,136,936 for August of this year as compared with the same month of last year. Increased activity in permits issued for factories and shops was especially noticeable in the summary. Residential construction also showed an increase, which on completion will provide for 1,476 new homes, compared with 1,335 for July, 1922, and 842 during August, 1921. Single residences to the number of 832 to cost \$2,689,350 were in the list, while 130 duplexes to cost \$861,450 were also reported. Eighteen apartments will provide for 277 families and cost \$611,100, while 20 store and apartment structures will provide for 37 stores and 76 apartments at a cost of \$420,280.

As to the type of construction, 1,737 frame structures cost \$2,575,531, 181 brick veneer, \$1,311,925; 109 brick and tile, \$2,960,830; 27 cement block, \$13,525; one steel frame, \$30,000 and five reinforced concrete, \$4,136,220.

The weekly reports of the Detroit Builders & Traders Exchange based upon the work in the architects' offices as well as that in prospect, for some of which sketches have already been made, would indicate that the last quarter of the year will produce a volume of construction in this city which will give to 1922 a showing better than most previous years, and perhaps set a new high record.

This will depend upon a number of things. For instance, how quickly the transportation situation will be bettered will have a great deal to do with speeding up construction, as it will mean the more rapid movement of building materials. At present there is a large shortage of materials and immediate relief is not in sight. It has caused the closing down of much work, particularly where face brick, cement and building tile were needed. The face brick situation has been a problem for the dealers as well as the contractors, since shipments were slow and nowhere near equal to the demand.

Detroit public work is practically at a standstill and most of the road-makers have been laid off. The contractors are also up against the shortage of labor and the consequent higher wage cost.

If present plans of the Bigelow Clay Products Co. are carried out it will mean that Michigan will soon have a plant producing clay building tile on a large scale. The company has been formed and the state securities commission has its stock issue under consideration.

The location of the company is about 20 miles from Detroit, situated on good roads and it is claimed that while the cost of freight on a 1,000 tile coming into Detroit is about \$20, the Michigan tile can be laid down on the job in Detroit and surrounding cities at a better price than is now paid for foreign tile.

The local dealers have not complained about the volume of business but they have raised a mighty howl about the difficulty they are having in getting materials shipped in. This

in turn, hits the contractors and they, too, are peeved. Naturally the owner who wants his job completed so that it can be utilized, also enters into the matter, and he kicks. But it all avails them nothing and the only hope they have is in the settlement of the rail strike and the rapid movement of freight.

As to the full situation, Detroit is probably in about the same position as the rest of the country. Ford has said that he would close down his plants on September 16, but it is hoped that if he gets enough fuel he will change his mind before that time.

Should Ford close down and turn out his more than 40,000 employes, it would make a big dent in the volume of money which changes hands in this city each week.

The National Safety Council completed its annual congress in this city September 1 and during its sessions, construction was given a lot of attention. The construction section, of which F. A. Davidson, of the Patent Scaffolding Co., Chicago, was chairman, held an interesting session. F. S. Robinson, secretary of the General Builders Association, was vice-chairman, as was W. F. Ames, manager of the Insurance Department of McClintic-Marshall Co., Pittsburgh. J. H. Schultz, of the James Stewart Co., acted as secretary.

"Why the Associated General Contractors Has Endorsed the Work of the National Safety Council," was handled by Gen. R. C. Marshall, Jr., general manager of the A. G. C., Washington, D. C.; John Nielson, superintendent for H. G. Christman Co., Detroit, spoke on "Practical Safety Methods from the Viewpoint of a Field Superintendent," while Mary A. Townsend, directory of safety and welfare of Irwin & Leighton, Philadelphia, spoke on "Keeping Accident Records According to Causes."

At the second session, W. E. Welch, of Travelers Insurance Co., New York City, spoke on "Safety in the Erection and Demolition of the Steel Frame Work on High Buildings," while Dr. Irving Condit, chief surgeon, General Accident Corporation, Detroit, spoke on "The Industrial Surgeon as a Safety Engineer," and L. W. Wallace, secretary Federated Engineering Societies, and vice-chairman Hoover committee on Elimination of Waste, spoke on "Elimination of Waste in the Construction Industry."

NORTON.

ARCHITECTS STRUCTURAL SERVICE COMMITTEE.

AT THE FIFTY-FIFTH ANNUAL convention of the American Institute of Architects the Committee on Structural Service was authorized to create a producers section of the committee as a sustaining body to collaborate with the committee in performing the following duties:

"Advising and counseling with manufacturers, who may so desire, on the character of their advertising as to size, form and content.

"To assist in furthering the use by architects and producers of the Standard Construction Classification adopted by the American Institute of Architects.

"To promote sincerity and reliability of statement in advertising."

Manufacturers of building materials and associations of manufacturers will be eligible to membership in the producers section, the membership dues being \$200 a year, \$100 on acceptance to membership and the other hundred on call if and when needed.

The chairman of the Structural Service Committee, who can furnish more detailed information to those desiring it, is Sullivan W. Jones, 19 W. 44th street, New York City.

Yes, victory goes to the efficient, but some of those afflicted with the efficiency bug and think they are, are not.



**OHIO FAR IN LEAD IN BUILDING BRICK ROADS—STATE
OPPORTUNITY OF FEDERAL ROAD-
BUILDING FUNDS.**

UP TO JULY 1, 1922, there have been completed and paid for under the federal aid project appropriating \$350,000,000 for national highways over 289 miles of brick roadway, with many road operations in various parts of the country in process of construction, in not a few of which brick is being used, these being for the most part in the middle west.

The \$350,000,000 appropriated by Congress as federal aid in conjunction with state funds of equal amount will result in the construction of about 46,000 miles of road. This mileage would parallel a railroad from New York to San Francisco nearly fifteen times, or, if divided equally among the states, would give nearly a thousand miles to each state. About one-third of the road-making projected under the new law has been completed.

The Bureau of Public Roads, Department of Agriculture, has furnished "The Clay-Worker" representative the following figures showing the number of miles of brick roads completed up to July 1, and the states in which these are located, as follows:

Pennsylvania, 22.7 miles; Illinois, 20.0 miles; Missouri, 3.5 miles; Kansas, 46.4 miles; W. Virginia, 11.3 miles; Georgia, 0.4 miles; Mississippi, 6.4 miles; Texas, 1.5 miles; Florida, 6.3 miles; Ohio, 131.0 miles; Iowa, 21.2 miles; Nebraska, 7.5 miles; Delaware, 6.2 miles; S. Carolina, 0.2 miles; Kentucky, 3.9 miles; Oklahoma, 0.4 miles.

For the fiscal year ending June 30, 1923, the following apportionment has been made to the various states by the government for road-building. Each state will match the government's allowance, thus doubling the figures named:

Alabama	\$1,035,614	Idaho	625,691
Arizona	702,188	Illinois	2,164,187
Arkansas	836,095	Indiana	1,305,904
California	1,641,399	Iowa	1,401,915
Colorado	894,117	Kansas	1,401,521
Connecticut	320,599	Kentucky	944,786
Delaware	243,750	Louisiana	664,660
Florida	591,217	Maine	463,440
Georgia	1,331,972	Maryland	427,086

Massachusetts	730,784	Oklahoma	1,168,226
Michigan	1,499,688	Oregon	788,443
Minnesota	1,415,731	Pennsylvania	2,265,969
Mississippi	863,271	Rhode Island	243,750
Missouri	1,632,086	South Carolina	707,492
Montana	1,031,257	South Dakota	802,707
Nebraska	1,054,126	Tennessee	1,098,461
Nevada	635,624	Texas	2,950,115
New Hampshire	243,750	Utah	566,278
New Jersey	628,581	Vermont	243,750
New Mexico	793,216	Virginia	971,219
New York	2,464,299	Washington	735,806
North Carolina	1,139,556	West Virginia	534,906
North Dakota	776,476	Wisconsin	1,263,211
Ohio	1,882,003	Wyoming	623,078

The Bureau of Public Roads reports that the average cost of constructing brick roads, taking the figures for the country over, is \$3.70 per square yard.

A GOOD WORD FOR BRICK PAVING.

THERE IS both a good word for brick paving and a hint to those making and selling pavers which comes out of the coal industry through the coal papers. E. P. Boyer, of the Boyer-Van Kuran Coal Co., Omaha, Neb., reports to the "Retail Coalman" about experimenting with a silo type of hopper and storage construction. He says:

"Up to the time of building these silos the most important improvement we have put in is the paving of all parts of the yard that are subjected to heavy hauling. Of the two driveways one is paved with concrete and one with brick. Inside the yard we have a paved strip 20 feet wide in front of the coal bins. The bricks are laid on a concrete base four to six inches thick. If only trucks were used it would not make any difference whether the paving were of bricks or concrete surface. But we have teams as well as trucks and we find that for the horses the brick surface is by far the most desirable. They can get a good foothold always on the brick and can move the load much easier than on a concrete surface."

This not only shows that people find favorable use for paving brick in unexpected places but it is a hint that by looking into various side and industrial uses for paving brick

each manufacturer may find opportunities to extend the usefulness and the market for his product in his own community.

A FINE BRICK ROAD AS A MEMORIAL.

THE UNUSUAL BEQUEST in the will of David P. Campbell, banker, of Utica, Ohio, of a stretch of brick paved roadway, was chronicled in the July Clay-Worker. Through the courtesy of the American Clay Magazine we now show a view of the brick-paved highway and a small portrait of Mr. Campbell and also of the granite boulder on which is inscribed the lines which commemorate Mr. Campbell's gift to his home county. The highway is known as Campbell's Pike. It extends north of Utica four miles. The pavement is 16 feet wide. The contract was let April 30, 1919, and the highway was completed the next year. This year in carrying out the improvement launched by Mr. Campbell, Knox county is to extend the brick paving to a point about two miles south of Mt. Vernon. This stretch is nearly three and a half miles. The contract has already been let.



At the time of the opening of the road there were 5,000 people present and 700 automobiles in line.

The granite boulder, which is supposed to be a meteorite, is heart shaped weighs two tons and is four by four feet each way. The bronze tablet is sixteen by twenty inches.

The boulder has been set at the county line and is surrounded by a bit of park with flowers, shrubs and trees.

People driving over this magnificent stretch of brick road pay their tribute to the man who had declared: "A permanent highway is the best gift one can offer to mankind. A brick road shall be my memorial."

TRUCK TRAFFIC.

In writing about the astounding growth traffic in "Forbes," O. D. Foster makes the statement that farmers haul 134,400-000 tons annually. The purpose of the article in question is to emphasize the great development in road building and truck traffic. It should be a reminder, too, that the motor truck is playing a part of some importance in the handling

of clay products, and we are forced to investigate the possibilities of extension of this service by railway congestion. The signs of the times point plainly toward truck traffic eventually controlling most of the short haul freight, say that up to distances of fifty miles. With good roads and good trucks the brick man can handle his own deliveries in the home territory with more certainty and less trouble and expense than is involved in using railway transportation.

BRICK PAVEMENTS IN MOTION PICTURES.

The Bureau of Public Roads has just released an interesting motion picture story of the manufacture of paving brick, entitled "Brick from Clay to Pavement." The story was filmed by representatives of the Bureau of Public Roads at one of the largest brick manufacturing plants in Ohio, and is said to represent every process in the production of paving brick, the final picture showing the brick in the handsome completed roadway.

The film is intended for showing in public gatherings and entertainments, engineering colleges and road meetings

THE CAMPBELL PIKE

This Tablet Commemorates the
Public Spirit of
DAVID PRESLEY CAMPBELL
of Utica, Ohio,
Whose Splendid Generosity Made
Possible the Improvement
Of This Highway.

A. D. 1920.

throughout the country, and it may be obtained upon application to the Department of Agriculture for use on specific dates without cost other than that of paying for transportation both ways. On account of the limited number of copies of the film it is best to make reservations some time in advance of the date on which it is desired to use it, when this is possible.

CLAY WORKING EQUIPMENT.

If you are interested in ceramic floor or wall tile presses, electric seggar presses, clay crackers, glaze or slip pumps, power wad mills, ball or pebble mills, belt-driven jiggers, blungers or agitators, dry pans or cleaning and polishing wheels, write the Mueller Machine Co., Inc., Trenton, N. J., for their latest loose leaf bulletins. See their advertisement on page 295 of this issue.

There is plenty of coal being dug now and it is merely a problem of transportation, a problem that must and will be solved.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

Washington Plant Burns.

Editor The Clay-Worker:

I am sorry to inform you the Star Brick & Tile Company's plant at Bay View, Washington, burned to the ground the afternoon of August 27, being a total loss on a \$20,000 investment, on which there was small insurance. In my many years of work as general manager of brick plants, this is my first experience with a fire, and just now I feel like a ship without a rudder. I have been with this plant twelve years.

C. B. MAYHUGH,
Mt. Vernon, Wash.

Coal Situation at Washington.

Friend Randall:

We are continuing to get enough coal to permit of continued operation, although it keeps us extremely busy acquiring same. We have been rather fortunate in having a rather big supply on hand, together with quite a number of cars which have been delayed in transit since before the creation of the Fuel Administration. These come to hand every once in a while, as did two of them today, as the result of continuous tracings from both ends of the line. We were also fortunate in picking up a couple of hundred tons from a private user. We are hoping some relief will be afforded before our present supply is exhausted, although the situation is very critical.

With very best regards to your family, as well as yourself, I am,

Sincerely,

L. PERRY WEST,
West Brothers Brick Co.
Washington, D. C.

Studying Effects of Gases on Clay and Cement Pipes.

Editor The Clay-Worker:

The Bureau of Standards has undertaken an investigation of the condition of sewer pipes in the city of Los Angeles for the purpose of studying the effect of sewage and sewer gases on clay and cement pipes, both of which are now being extensively used in that city. In this work it is co-operating with the clay and cement pipe manufacturers and the office of the city engineer.

The program of the investigation involves the excavation and inspection of sections of pipe from laterals in various parts of the city, and the replacement of these with tested pipe for future examination. The major part of the work, however, consists in the installation of small sections of pipe in manholes in such manner that a part of the specimens will be submerged in the sewage and a part exposed only to the action of the sewer gases. The exposure points have been selected in such manner as to cover typical conditions throughout the system, and at these points periodic analyses of the sewage and sewer gases will be made for the purpose of determining the concentration of ingredients which may be injurious to the pipes.

The real object of the investigation is to determine from

the chemical survey as outlined above general relations between the rate or extent of deterioration of pipes and concentration of damaging elements in the sewage and gases. The problem is a difficult one, not only on account of the extent of the work involved, but more particularly because the field which it enters is as yet unexplored.

CALLIE.

Desirable Site in Texas for Brick Plant.

Editor The Clay-Worker:

We have at Graham, Texas, an inexhaustible supply of the very finest clay suitable for brick or tile, and we are anxious to have a plant located here at once.

The great amount of building at Graham and in the adjoining trade territory would warrant the building of a first class brick and tile plant.

We will state for your information that we have fuel, wood, coal, oil and gas, in inexhaustible quantities, together with an abundant supply of pure water.

If you can put us in touch with a first class reliable concern that really wants to do business, we will appreciate it.

Yours very truly,

D. WALKER,
Secretary Graham Chamber of Commerce.

Utah and Colorado Brick Plants Busy.

Editor The Clay-Worker:

I have been taking a little trip around through Utah and Colorado and it occurred to me you would be interested to know the Utah brick plants are all operating to normal capacity. The coal situation has not been nearly so acute with them as with the plants in Illinois and Iowa. The Salt Lake Pressed Brick Company, in particular, is having a busy season. They have just completed the installation of a new American new type dry pan with a capacity of fifty tons per hour, and a Tyler Hummer screen of fourteen mesh, with the same capacity as the dry pan.

The Provo Pressed Brick Co. are making a number of improvements at their plant at Provo, Utah, and are just now building new dry floors.

I found both of the brick plants at Canon City, Colorado operating to capacity. The new machinery building of the Summitt Pressed Brick Company at Pueblo, has just been completed and a new dry press equipment has been installed.

A TRAVELER.

Brick News of Arkansas.

Editor The Clay-Worker:

There is a considerable amount of paving being done over the state, especially in Little Rock and Pine Bluff. Whether any paving brick will be used in this extensive work is not known at present. A paving program of several hundred thousand dollars has been started in Pine Bluff. Several other smaller cities over the state have been doing or are going to do paving.

Relative to paving, it has been found from sad experience in the latter city that wooden paving blocks are no good for street purposes. When a rainy season comes, the blocks swell up and cause the streets to bulge, making it very unsightly as well as uncomfortable for vehicles. It is also unsafe. The writer has also observed wooden blocks unsuccessfully used in street paving in Pensacola, Fla.

C. B. Wilson and his son a short time ago completed brick and concrete work on the Russellville (Ark.) cotton compress and left for Cleveland, Miss., where it is said they had the contract for placing 500,000 brick and doing the concrete work on a new compress to be constructed there.

One of the kilns at the plant of the Rector Tile & Brick Co., Rector, Ark., was destroyed by fire recently, with a loss of about \$500. The firm was to rebuild, according to W. C. Pratt, manager.

Brick plants in Fort Smith, Ark., are reported running full capacity now. In some instances plants which have been using coal have started using gas for fuel.

The Hydraulic Pressed Brick Company of Little Rock, Ark., furnished the brick for a new Methodist church at Portland, Arkansas.

There is considerable Fuller's earth to be found in Arkansas. It is a clay which has the property of decolorizing or clarifying oils. The color is generally light brown or gray, but varies to white, yellow, greenish gray, pink, or even black. The specific gravity is from 1.75 to 2.50. Several rich deposits have been found over the state, and these will now be developed, it is said. The Arkansas earth is used for bleaching cottonseed oil, tallow, etc., and the principal markets are Kansas City, Chicago, St. Louis and the southern states.

ARKANSAS TRAVELER.

WHITEWARE STUDIES IN PACIFIC NORTHWEST.

The United States Bureau of Mines, in co-operation with the University of Washington, will undertake an investigation of the residual kaolins and feldspars of eastern Washington and northwestern Idaho for whiteware bodies. The work to be done will follow the lines of the kaolin investigations now under way at the ceramic experiment station at Columbus, Ohio. The work will be done in the new mines laboratory of the University of Washington at Seattle.

NEW ZEALAND BRICKMAKER VISITS AMERICAN PLANTS.

Mr. C. A. Shiel of the firm of C. & W. Shiel, New Zealand, accompanied by his wife, has made an extensive world tour extending over a period of nine months sightseeing and inspecting brick and tile plants where the opportunity offered. They spent some time in England and Scotland and during the past month have been seeing America. Naturally, Mr. Shiel is much interested in American machinery for he has been making brick with Chambers machinery for twenty years or more. He has two Chambers outfits, one making end-cut building brick and the other side-cut building brick.

New Brick Company Takes Over Ludowici Celadon Company.

The McDonald Brick Company, of Ludowici, Ga., composed of C. J. McDonald, C. W. McDonald and J. L. McDonald, has filed petition for incorporation to the superior court of Long county for a period of twenty years, with the privilege of renewal.

The business of the corporation is to manufacture brick, roofing tile, drainage tile and other products made from clay. The capital stock of the company is \$50,000, with the privilege of increasing to \$100,000.

The plant of the McDonald Brick Company was formerly the Ludowici Celadon Company, manufacturers of roofing tile, and the plant located at this place was one of the five tile manufacturing plants of its kind in the United States. The clay used by the McDonald Company is of the finest grade, and of an inexhaustible quantity. The plant has the equipment to turn out 100,000 bricks a day.

A lot of coal miners had a good long vacation during the summer, and now the rest of us will pay for it in the coal bills.

OHIO CLAY NEWS.



UTLOOK FOR the building brick industry in the Canton district for fall and winter never has been so gloomy, according to a statement in September by Paul C. Belden of the Belden Brick Company, one of the largest manufacturers of face and building brick in the Canton district, in fact in the United States. "Transportation facil-

ities are very bad at this time and will get worse," Mr. Belden said. "Outgoing shipments are practically at a standstill and embargoes on certain roads make further shipments impossible," he declared. "The inability to get fuel due to rail tie also is hindering progress in the industry." According to Mr. Belden, there is a chance for immediate price advance in face and building brick, although there is no definite time as to when the increases will come, he said.

Several plants of this company and others are idle at this time and more will close down within a short time, officials said this week. Demand for face and building brick continues good, as home building this summer never has been more active, and had there been no difficulty in moving brick shipments and getting fuel to operate the plants, the industry would have experienced one of its most prosperous years.

The paving brick industry has kept up its rate of production surprisingly well, in spite of great obstacles, say officials of the Metropolitan Paving Brick Company of Canton. Price of paving block in the past few days has been advanced another \$2 per 1,000. There is also possibility of another slight increase if conditions do not improve soon, it is said. This company reports three of its four plants in the Canton district operating and two of three at Youngstown still going.

An official of the company said this week that the firm has plenty of business, if rail conditions would only warrant shipment. Instead of improving, they are becoming worse, and uncertainty of shipments is resulting in cancellation of large orders.

Outbound shipments are giving the plant more worry than fuel shipments in, because some of the fuel is from the company's own mines within the immediate vicinity of their brick manufacturing plants.

Paving contracts are still being awarded and contractors intend to keep on the job just as long as the weather will permit.

Work is progressing rapidly on the new Crescent Pottery at Alliance. The foundations for the eight kilns have been completed and the substructures for a part of the kilns is under way. The railroad company is now installing its switching facilities.

The Urichsville plant of the American Sewer Pipe Company resumed operations the first of the month after an idleness of six months. Eighty-five men were given employment. The finished product will be stored on fifty acres of land recently purchased by the company. Officials of the company predict a steady run.

The property of the Louisville (Ohio) Brick and Tile Company was sold at sheriff's sale recently for \$42,670 to satisfy a judgment in favor of Arthur Keim. The sale includes all the land and holdings and was appraised at \$64,000.

Shipments from brick plants in the vicinity of Dover and Sugar Creek, where many plants are located are practically at a standstill.

The Western & Lake Erie Railroad equipment is rapidly deteriorating and the company does not have the engine power to move the cars. It is reported that 150 locomotives are in the Brewster yards awaiting repairs. BUCKEYE.

OBITUARY.

DEATH OF HARRY S. RENKERT, CANTON, OHIO.

THE FINAL SUMMONS recently reached Harry S. Renkert at Geneva, Switzerland. He had been abroad for some months in the quest of health and recreation. In his death Canton loses one of its foremost citizens, who

pany. In 1902 he helped organize the Metropolitan Brick Company, first serving as secretary and treasurer, afterwards as general manager and finally as president, which office he filled at the time of his death. He was identified with other local business interests of importance. He was a member of the Trinity Lutheran Church and a 32nd degree Mason. He for many years took an active part in the civic life of Canton, serving as president of the local Chamber of Commerce and in other local organizations. He is survived by his



THE LATE HARRY S. RENKERT.

for many years has been identified with almost every important movement in that industrial center. Mr. Renkert was born at Dover, Ohio, June 27, 1875. He came to Canton when he was in his teens and began his business career as a clerk in a bank and afterwards as stenographer. Through his ability and industry he achieved marked success. Early in the 90's he became a stockholder in the Royal Brick Company, of Canton, and in after years served as treasurer of that com-

widow and three children, Donald J., Dorothy Alice, and Harry S., Jr. His family were with him at the time of death.

When the year's record is completed it will show more home building than has ever been done in a single year before, and a greater percentage of brick used. This is cheering, and there goes with it a cheerful outlook for this home building boom to continue for several years longer.

THE HARROP CONTINUOUS TUNNEL KILN.

AN INTERESTING booklet, illustrating and describing the Harrop Continuous Tunnel Kiln has been issued by the L. E. Rodgers Engineering Co., Chicago, the aim and purpose of which is to suggest a means of producing "Better Ware at Lower Cost." It is a direct fire kiln, using no complicated or expensive refractory shapes, which means a low first cost and it is claimed that for the same reasons the cost of upkeep is less than in other types of tunnel kilns. Also that seventy to eighty-five per cent of saving in fuel over the usual periodic kilns is assured and there is also a saving of twenty-five per cent in the cost of setting and drawing of ware. In this kiln any kind of fuel can be used, bituminous coal, hand stoked, or in underfed stokers. Artificial gas, natural gas or producer gas, crude oil, or gas oil may be used effectively in this kiln. A copy of the book may be had for the asking. Address L. E. Rodgers Engineering Co., 30 North La Salle Street, Chicago.

AIREDALE BRICK SOLD ON REPUTATION.

As an advertising manager, Irving A. Ryttenberg, president of the Sumter Brick Works, Sumter, S. C., has any theatrical or show ad man backed off the boards. His series of unique letters to his dear friend "Archi—Tect" has won for him publicity that money cannot buy. Mr. Ryttenberg writes us his partner and secretary of the company, Mr. J. P. Maurer, has been ill for more than three months, so "Rytt" has had to run the plant and as a result has neglected the sales end almost entirely. However, much like the well known auto which humorists insist runs on its reputation, without an engine or any internal works, Rytt's famous "Airedale" brick sell themselves on their reputation. In fact, he has recently broken into verse on the subject of selling his brick:

Somebody said, "Rytt sold that Job."

"We expected as much," quoth he.

Somebody lied, is all I can say;

Somebody falsified me.

Without a sales-manager, or anything of the sort, the Sumter Brick Company recently made a shipment of brick to Rochester, Minn., for the Mayo hospital buildings, or as "Rytt" says, for the Mayo clinic to dissect. They are still getting many compliments on their brick in the Shelburne Hotel job at Atlantic City.

PERSONAL MENTION.

Charles F. Clippert, of Detroit, Mich., has just returned from an extended trip to the Pacific Coast, and is quite happy over a family event which has made him a grandfather again. The Clippert Brick Company's plants are running right along, but they are paying top prices for coal.

J. Howard Chambers, of the Chambers Brothers Company, Philadelphia, Pa., writes in a recent letter that they have been effected more or less by both the coal and railroad strike. They are now paying around \$15.00 per ton for foundry coke, which under normal conditions costs \$6.50. Steam coal is difficult to obtain and the quality very unsatisfactory and costs more than double the normal price.

Douglas F. Stevens, the genial, energetic general manager of the Acme Brick Co., with plant at Cayuga, Ind., and office just over the Illinois line at Danville, looked in at The Clay-Worker office recently. The Acme Company has had a busy season. As Mr. Stevens puts it, "Business has been just

wonderful." Due to the advantage of a local coal supply, they have not been in the least inconvenienced by the coal shortage, but just now they are beginning to feel the pinch of car shortage. In fact, the situation in that particular is getting somewhat acute, but Mr. Stevens with characteristic optimism thinks that will be straightened out very soon and without a great deal of trouble.

SOMETHING NEW AND NOVEL IN THE LINE OF A DRY CLAY GATHERER.

THERE HAS BEEN from time to time different machines put on the market to gather clay for dry pressed brick manufacture, and probably the best and simplest and most efficient of all the makes that are now in use, Mr. Jacob Stocke, vice-president of the Progress Press Brick Company, of St. Louis, Missouri, has invented and is now using practically every day that the weather permits the gathering of dry clay.

The machine is radically different from any thing else the writer ever saw, in that it has its driving sprocket—the sprocket that forms the lower turning point of the chain—keyed on to the axle of the rear wheels, and thus eliminating the outside driving chains used in most clay gatherers, which—the outside chain—always gives more or less trouble.

The scraper that collects the clay is arranged differently also, in that it is so suspended, that by using a different length link, it can be brought closer to the buckets, and as the buckets wear, the scraper is set forward, so that there is always the same clearance in between the cups and the scraper. In the event that it is desired to move the machine from one field to another, possibly crossing a made road, provision is made so that the scraper can be raised and slipped on to a link, giving ample road clearance.

Provision is also made, to easily convert the machine from a horsepower machine, to a gasoline or steam powered engine, making it at will, either a horse or a motor driven machine.

A ratchet is set in the wheels, so that when turning, one wheel will not slip, as in the case of most other machines.

The machine is made entirely of steel, with the exception of the wheels, which are wood and the two wheels on the loading side of the machine, have their spokes covered with a solid sheet of steel plating, which prevents the loading wagons or carts from getting their hubs in the spokes of the wheels of the machine.

The elevator is of ample height to handle damp sticky clay, and a chute lined with plate, leads from the discharge of the elevator down to a point where it just clears the top of a wagon or cart.

The whole machine is short coupled, which makes it easy to get in close in a corner of the clay field—particularly if the corner is fenced, this feature being appreciated by those who have the long couple gatherers, which take a big radius to turn in.

A special steel chain is used on the conveyor which makes a very long life.

In passing we might also mention that Mr. Stocke is the inventor and patentee of the attachment that can be put on any dry press for the making of dry press rough texture brick, this device is now being extensively used by dry press manufacturers, who see the folly of disposing of their dry press outfits and buying stiff mud machinery. The difference in texture is not noticeable when standing ten feet from the building, millions of these brick have been used in buildings of every description from office buildings eight stories in height, apartment buildings, residences and bungalows.

Written for THE CLAY-WORKER.

WITH THE GEORGIA CLAYWORKERS.



HILE NEARLY ALL of the brick and clay products plants over the southeastern territory are operating to some extent, there are very few that have not been compelled to greatly curtail production the past month due to the railroad and coal strikes, while a number of the plants have been compelled to shut down entirely until

such time as some sort of a settlement is reached to remedy the coal and railroad situation.

It is generally believed by the manufacturers in Atlanta that the condition is more acute in the southeast than in other parts of the country.

Demand for all kinds of brick is considerably in excess of present production at the plants, while there are millions of brick and tile in storage in the southeastern yards already sold, but which cannot be shipped due to the car shortage resulting from the railroad strike. Those plants that are operating are finding it necessary to store a considerable amount of their finished product in their yards for the time being at least, and if the strike continues much longer a further curtailment in production will become essential.

In the eastern part of North and South Carolina the situation appears to be more acute than elsewhere, and several plants in that section have shut down the past month. The manufacturers held a meeting at Florence, S. C., the latter part of August and after a survey of the situation decided to make a determined effort to obtain coal in order that their plants may operate.

At the time the strikes began the brick industries of the southeast had reached a point where business was better than it had been.

B. Mifflin Hood, president of the B. Mifflin Hood Brick Co., of Atlanta, and also vice-president of the National Face Brick Manufacturers' Association, announces that the company has established another branch office in the Carolinas, the new office being located at Greenville, S. C. The Hood company now has offices and branch plants in nearly all of the important southern cities, in all of which are maintained sales and display rooms.

The flooring tile department of the Mellville, Tenn., plant of the B. Mifflin Hood Brick Co. has recently been enlarged and partly converted for the manufacture of mission and shingle roofing tile, a comparatively new product with the Hood company. The tile is of old Spanish design and has proven immediately popular, the company advises, production now being at capacity with a demand for all this tile the company can turn out.

The Keeling-Cassidy Brick Co., organized recently at Atlanta, to carry on a wholesale and retail business over the southeast, advises that the company is handling all lines of brick and tile, but specializing in burned clay products. They are distributors in the territory for United States Quarry tile and for the Denison Interlocking Tile Corporation. Territory comprises the Carolinas, Georgia, Florida, Alabama and Tennessee. G. W. Keeling and J. A. Cassidy, organizers of the company, have been many years in the brick manufacturing industry in the southeast.

Following the purchase recently of the brick and clay products plant of the Rome Fireproofing Co., of Rome, Ga., by the B. Mifflin Hood Brick Co., of Atlanta, about \$75,000 is being invested by the latter company in improving and enlarging the plant, and converting it for the manufacture of hollow building tile. The Rome company formerly was

known as the Old Rome Brick Co., and was one of the oldest brick concerns in the state.

With a producing capacity of approximately 1,000,000 brick per month the Signal Mountain, Tenn., plant of the F. Graham Williams Brick Co., of Atlanta, has started the manufacture of a new ornamental brick just placed on the market by this company, and known under the trade marked name of "Veltone." Mr. Williams advises The Clay-Worker scribe that the plant is running at capacity with orders in hand to insure steady operation all year at least. Shipments the first five weeks exceeded 1,000,000 of this new product, but are being slightly held up at present because of the car shortage.

Mr. Williams also advised that the company had opened a new branch office at Greenville, S. C., in charge of J. C. Plowden. This office will handle the company's trade in Carolina territory. There are now three Williams offices in North and South Carolina, the two others located at Charlotte, N. C., and Florence, S. C. The new office in Greenville is in the Bruce building. P. O. D.

BRICK EXHIBIT AT ATLANTA EXPOSITION.

THE BRICK and clay products industries of Atlanta and the Southeast will be among those taking part in the "Made in Atlanta" Exposition, September 18 to 25, at the Atlanta Auditorium this display to include a miniature brick plant in complete operation. Practically all of the industries of Atlanta will have displays of a similar nature where it is at all possible for them to do so. The textile industries, for instance will operate a small textile plant; the flour milling industries, a small flour mill; the shoe industries, a shoe factory etc.

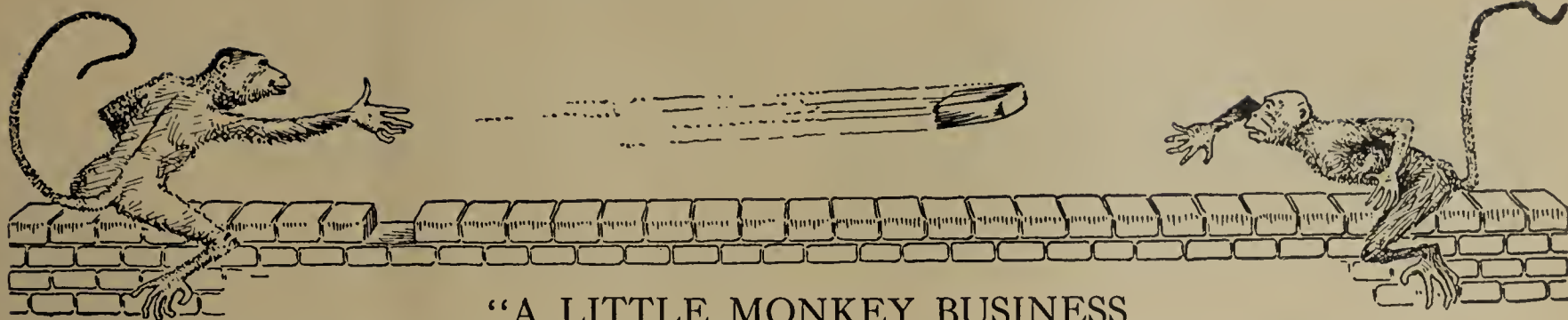
In addition to the operation of a plant which will show how brick and clay products are made, including all operation from the raw material to the finished product with the possible exception of the baking, all of the brick and clay products plants of the city will have on display the articles they produce.

GOOD EXPERT ADVICE.

Business people have a habit of calling in experts to talk to them at conventions, and of seeking the advice of experts through their associations. And often individual concerns do the same thing. This is an indication of a desire for progress and better methods, but sometimes it is disappointing, because while the experts may have some splendid ideas, they are lacking in that practical knowledge of the business which is essential to hitch these ideas up and put them to work.

In the course of a talk before the last annual meeting of the Chamber of Commerce of the United States, Wesley C. Mitchell, who is Director of the National Bureau of Economic Research in New York, in talking on the subject of a practical study of business cycles, gives some good advice. He said in the beginning of his talk that his chief object was to impress upon business men the importance to their own affairs and the welfare of the nation of their taking seriously the problem of business cycles. In closing his address he said that the practical work on a problem of this kind must be done by the business men themselves rather than by professional economists. What he sought to urge was to keep alive their interest in such questions, and that they apply themselves diligently to the solution.

This is good expert advice and it is the kind we need more of. We need men who are thinkers to help keep us thinking, and to direct our thoughts along those channels which will make for the best and safest order of progress. The actual work in the main must be done by practical men engaged in the business itself.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

A LITTLE NERVOUS.

"Is your husband a good provider, Dinah?"

Yessum, he's a good probidah, all right, but Ise allus skeered dat niggah's gwine ter git caught at it."

BRIGHT BOY.

Jones: Say, Jenks, do you know who was the first bookkeeper?

Jenks: Can't imagine, Jones.

Jones: Why, Eve was the first bookkeeper when she introduced the loose-leaf system.

PUBLIC SERVICE.

"Wait for the car to stop, and don't get on until it does stop!" yelled the conductor of an open surface car to a woman making desperate efforts to get aboard as the car slowed up slightly at a corner.

"Well, why doesn't it stop?" yelled the woman, as the car took on speed again and made off over the crossing.

"Well, why didn't you jump on?" the conductor yelled back.—"New York Evening Post."

FANCY WORK.

Two old settlers sat smoking in a cabin far away in the backwoods. No feminine presence ever graced that settlement, and domestic arrangements were primitive and rude.

The conversation drifted from politics to cooking, and one of the confirmed bachelors said: "I got one o' them there cookery books once, but I never could do nothin' with it."

"Too much fancy work about it?" asked the other.

"You've 'it it. Every one o' them recipes begun in the same way, 'Take a clean dish——' and that settled me at once."—"Tit-Bits" (London).

A MODERN JOSHUA.

An aged colored man was arrested for the illicit distilling of liquor among the hills of eastern Kentucky, and while loudly protesting his innocence was taken before the local judge for the preliminary hearing.

Judge: "Prisoner, what is your name?"

Prisoner: "My name is Joshua, jedge; Joshua."

Judge: "Aha! Are you the Joshua who made the sun stand still?"

Prisoner: "No sar, jedge, no sar. Ise da Joshua what made da moonshine still."

VERY PROVOKING.

A negro was receiving bricks at the top of a ten-story building in Los Angeles, where some repair work was going

on. Another negro on the ground was loading the bricks on the carrier. The negro above accidentally dropped a brick, hitting the one on the ground squarely on the head.

He was very indignant and yelled to the one above: "Be a little moah car'ful up thar, nigger. That brick hit me and made me bite mah tongue."

REAL PRESENCE OF MIND.

Shoeless, he climbed the stairs, opened the door of the room, entered and closed it after him without being detected.

Just as he was about to get into bed his wife, half aroused from slumber, turned and sleepily said: "Is that you, Fido?"

The husband, telling the rest of the story, said: "For once in my life I had real presence of mind. I licked her hand."

ASK THE CLERK—HE KNOWS.

Last winter an association of college professors held a convention at one of the Chicago hotels. In one of their meetings the discussion waxed warm, and they finally decided to settle the disputed point by referring to the encyclopedia. Two of them went down to the desk to ask the clerk if a copy of the much-needed book was available.

"May I inquire if you have an encyclopedia?" said one of professors, looking benevolently over his glasses.

"No, I am sorry we do not. But"—solicitiously—"what is it you want to know?"

A Distinction with a Difference.

"Mose, I understand your wife takes in washing."

"No sah, no sah, dat's a mistake. I takes in the washin'. My wife does it."

TRY THIS ON THE PIANO.

Adams: Say, Waller, how is it that you can read my mind so readily?

Waller: It's very simple.

When is a king not a king?

When he is a ruler.

Prof.: Watson, why are you writing that theme so fast?

Watson: I want to get it done before my fountain pen runs dry.

Prof. (on physics): This static machine is run by a crank.
(N. B.—He was turning the handle.)

Jackson: That girl has a complexion like peaches and cream.

Watson: Something; it comes in boxes and bottles, too.

Keator: What would you call a man that hides behind a woman's skirt?

Keating: A magician.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

Title registered, contents copyrighted.

THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
One copy, one year (if not paid in advance)	2.50
Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 78.

September, 1922.

No. 3.

CURRENT COMMENT.

Put those idle kilns to work.

* * *

It is work days as well as school days, so let's get busy.

* * *

What we need is a little more interest in results and less argument about wages.

* * *

One of the difficult things to find when you lose it is the goodwill and respect of your fellowmen.

* * *

There is no question about making advertising pay, except the question of how to do it effectively.

* * *

No man who is really interested in his work is afraid of hurting himself by working more than eight hours in a day.

* * *

Too much climbing upward of prices will lead to a slower demand, and dull times will follow, so let us strive to avoid inflation.

* * *

The Literary Digest's straw vote on prohibition shows a heavy wet majority, but that is dry comfort to the thirsty as the situation now stands.

* * *

Enough has been wasted in strikes this year to pay the soldier boys a bonus. And though we can't get it back, we can get a lesson from it if we will.

* * *

A strike against the government must always lose, for there must be no question of the supremacy of the government over any class or organization of its citizens.

One good way to make and hold friends is to be friendly, and not merely pretend to be.

* * *

It is just as important to learn how to do without things as it is to learn how to do with them.

* * *

If we must choose between them we prefer government by injunction to government by labor agitators and strike leaders.

* * *

Free speech is all right as a fundamental idea of government, but there is a lot of free speaking indulged in that we could get along without very nicely.

* * *

If you have a better product than usual it is a good start, but you have to advertise this fact to the world to keep going and get all that is coming to you in the way of trade.

* * *

All signs point toward more than the usual amount of winter work among the brick plants, and the way to be prepared for it is to get busy early on your plans for winter operations.

* * *

More specific attention to the chimney and flue needs this fall may help you build up some good small lot trade in your own community, and it may also pave the way to more brick used in the near future for home building.

* * *

Burning is the big factor in clayworking, but just the same there are many opportunities to improve efficiency and reduce costs by having the right machines and using modern ideas and devices in the handling of material and wares, and this is a thing that should have its fair share of attention.

* * *

The more nearly we can get the brick and hollow building tile business on an all the year basis the better the chances for low cost and fair profits. There is now an effort to get building on a more nearly continuous basis, which will help some, and with this encouragement plant managers should seek for ways and means to keep going steadily throughout the year.

RESEARCH MEN AND THEIR WORK.

Those men engaged in research work for industry, like many of the school teachers and ministers of the country, perform a service of much more importance than is indicated by the immediate rewards they get in the form of salaries. It is an established fact that fundamental research work very seldom pays big immediate profits, but that it may easily pave the way to great gains for industry as a whole. The research men are the pathfinders of science who perform service which often benefits others more than it compensates them. For this reason they may be classed among those who render a distinct service to the country as a whole as well as to the specific industries for which they undertake the research work.

COAL WAGE INCREASES.

Perhaps the most graphic illustration of how coal costs have been added to by increased wages of coal miners is found in a review of the anthracite coal situation by the Chamber of Commerce of the United States, which charts the anthracite production and wages from 1913 to 1921 inclusive. This charting shows that in 1913 there were produced 71,046,816 tons of coal, and the wages paid for producing it amounted to \$113,320,000. In 1921 the anthracite production was 70,-

191,096 tons, and the wages paid to produce this slightly smaller quantity than in 1913 reached a total of \$283,961,000. While these figures apply specifically to anthracite they are fairly illustrative of what has happened in the coal industry as a whole. This and higher wages resulting in higher freights on the railroads is what has made the drastic increase in the coal prices.

WAGES AND PRICES TEND UPWARD.

There are reports of some wage advances in the brick making industry, and the recent scarcity and high price of coal has served to increase cost and lead to some price advances here and there, all of which is in keeping with the tendency in manufacturing lines everywhere.

Coal, which is the source of most of our industrial power and an important item in cost manufacture will likely continue high for at least till spring, because in adjusting the strike the miners have won so far as the high wage scale is concerned, and it is the high wages and high cost all around rather than magnitude of the demand which is causing a noticeable upward trend in prices of practically all manufactured products. How long this will last and how far it will go is a question of some concern right now. There are some indications of a repetition of what happened in 1919 and 1920, but it is hoped that the peak will be lower and the reaction less.

The one exception to the upward tendencies is in farm products, which are plentiful and have shown a downward tendency in prices. This may serve to put a check on the tendency to high prices in manufactured products and to bring a better balance all around, but at the present time prices on practically all manufactured goods as well as on clay products show an upward tendency.

BETTER HOMES WEEK.

Are you planning or helping to plan a demonstration or exposition to promote better homes the week of October 9 to 14? This is the week set apart as better homes week in America, and the manufacturers and dealers in building material are expected to take an active part in each community in developing a wide interest in better homes during that week.

There is a plan book for this kind of a home campaign just off the press and it comes from the Delineator Bureau of Information, 223 Spring street, New York, where Mrs. William Brown Meloney is secretary of the movement. The plan book tells how to organize, set up committees and get busy at carrying on the better homes work in your community, with suggestion for the committees as well as for their selection.

Broadly speaking we may say that the more interest that can be developed in better homes the more business it means for the brick and hollow building tile industries, because they represent the highest ideas for home construction.

If you have not already received one of these plan books and gotten into action at developing a campaign in your community for better homes the week of October 9 to 14 it is time to write for one and get busy.

SANITARY WARE.

A recent summary of business conditions by the Federal Reserve Bank of Philadelphia makes note of the fact that there has been encouraging activity in the manufacture of that class of pottery known as sanitary ware. The report says that a close analysis of the business shows that a complete revolution has been brought about within the past five

years, and where formerly there was one bath-room modern houses now contain from two to three. Also the quality of fixtures has shown a decided improvement and it is this which has opened the way to bigger trade in those burned clay products classed as sanitary ware.

THE ACCIDENT RECORD.

In a Bulletin of the National Safety Council, located at 168 North Michigan Ave., Chicago, we are told that there were 76,000 accidental deaths during 1920, or a life snuffed out every six minutes. The one cheerful item in the report is that there is a decrease in industrial accidents. It is the automobile which has added to the list of accidents in recent years while we have been curtailing them in industry. Automobiles are said to be responsible for more than 11,000 deaths a year now, or 30 a day. Falling, however, was responsible even for more fatal accidents than automobiles, the rate being 34 a day. Burns, it is said, claim 22 lives a day. Other major causes are drowning, gassing, firearms, mine accidents, machinery, and so on. Twice as many men were victims of accidents as women. The burden of accidents also has fallen heavily upon children. A consideration of this accident record should make us all thoughtful and lead us to lending a willing hand to all rational suggestions for greater safety.

TRADE ASSOCIATIONS AS FACTORS IN RESEARCH.

Under the head of "Science for the Common Good," Harrison E. Howe, editor of the Journal of Industrial and Engineering Chemistry, tells something of the good work for the common good that has been done by trade associations both through co-operating with government departments and other channels such as fellowships in schools and laboratories. He names a few instances of 35 or more associations engaged in research work of some form or other.

Among the things of particular interest he said one is that trade associations have come to the public attention of late years in a worse light than they deserved. Because some of the activities of associations have been commercial and have led to infractions of the anti-trust laws there is a disposition in the public mind to link trade association efforts with price boosting, combinations and restrictions which work hardships upon the public. In contrast to this he points the good that trade associations have been doing in their scientific work which is too little appreciated. Another point he makes that is worth careful digesting is that the days of casual discovery have gone by for most industries. The time is here now for positive knowledge and strict economy in manufacturing and selling, and this means we must have co-operative work directed along positive lines to develop and try out ideas which point the way to progress.

Another thing he says is that it has always been maintained that industries gain the greatest benefit from applied science when individual manufacturers establish their own research and control laboratories. This argument is good in some instances and applies to industries of great magnitude, but generally there are a great number of industries in a given line and many of their problems are common to all, consequently it makes for both economy and better progress for them to co-operate, conduct some research work through their own association efforts, and through their associations establish fellowship and co-operate with government departments and others engaged in scientific research which is applicable to the industry in question.

Note is taken that the U. S. Bureau of Standards has prepared a report which shows that 102 trade associations are co-operating with that Bureau, and everywhere we find evi-

dence that those trade associations which have as a large part of their purpose that of education or promoting new and better knowledge among the members have been co-operating with government authorities and seeking to follow up all practical channels of research and information that will be helpful to all.

That this is a line of association activity which is commendable and does not generate suspicion or call for adverse criticism goes without saying. What we need to do is say more about the real good that comes from this kind of association effort so that we may encourage more of it and reap still greater benefits.

MORTAR COLORS THAT SATISFY.

Unsolicited testimonials always taste good, so it is not surprising that the Ricketson Mineral Paint Works, Milwaukee, Wis., were pleased recently to receive a letter from Albert Lake, manager of the Lake Stone Co., Washington, D. C., saying: "We have used your mortar colors for over 18 years in cement work and the manufacture of artificial stone and have found the colors to be uniform and to hold indefinitely. While we have experimented with other makes, we have never found any that could compare with yours." Many brick and tile dealers can offer testimony to the same effect, that is why business continues good with the Ricketson Mineral Paint Works. Booklets giving information in regard to mortar colors will be supplied on application to Frederick G. Bogk, President, Railway Exchange Building, Milwaukee, Wis. See their ad on page 289.

THE BOOK OF SMILES.

The current issue of the Book of Smiles brings the usual grist of witticisms and jibes. A seasonable one is found on the last cover, and reads, "One of the saddest of sights is a one-armed man trying to tell about that biggest fish that got away." Another heartfelt expression is entitled:

"A Thought."

"Don't know how to say it, for my brain's in a whirl.

But God must love folks to whom he sends a little girl."

We say "Heartfelt" because we happen to know that two granddaughters have blessed the Elliott family home during the past few months. The grandparents are doing fine.

Of course, "Smiles" tells why brickmakers profit by the use of the Standard Dry Kiln. If you haven't received a copy and appreciate a bit of light reading intermingled with business or shop talk, address the Standard Dry Kiln Company, 1547 McCarty Street, Indianapolis, whose ad will be found on page 228 of this issue.

CHANGES IN THE STAFF IN THE DEPARTMENT OF CERAMIC ENGINEERING, UNIVERSITY OF ILLINOIS.

Mr. T. M. McVey has joined the staff of the department as an instructor. Mr. McVey graduated from the University of Illinois in 1914. From June of that year until April, 1915, he was employed on some special work which was being carried on in the department.

Subsequently he was assistant superintendent of the Clinton Paving Brick Company in Clinton, Ind. Then he went to the Streater Brick Company at Streater, Ill., where he remained for about two and one-half years, and later was connected with the Basic Products Company of Kenova, West Virginia.

More recently he was with the Lacon Clay and Coal Company of Lacon, Ill., as superintendent of the plant.

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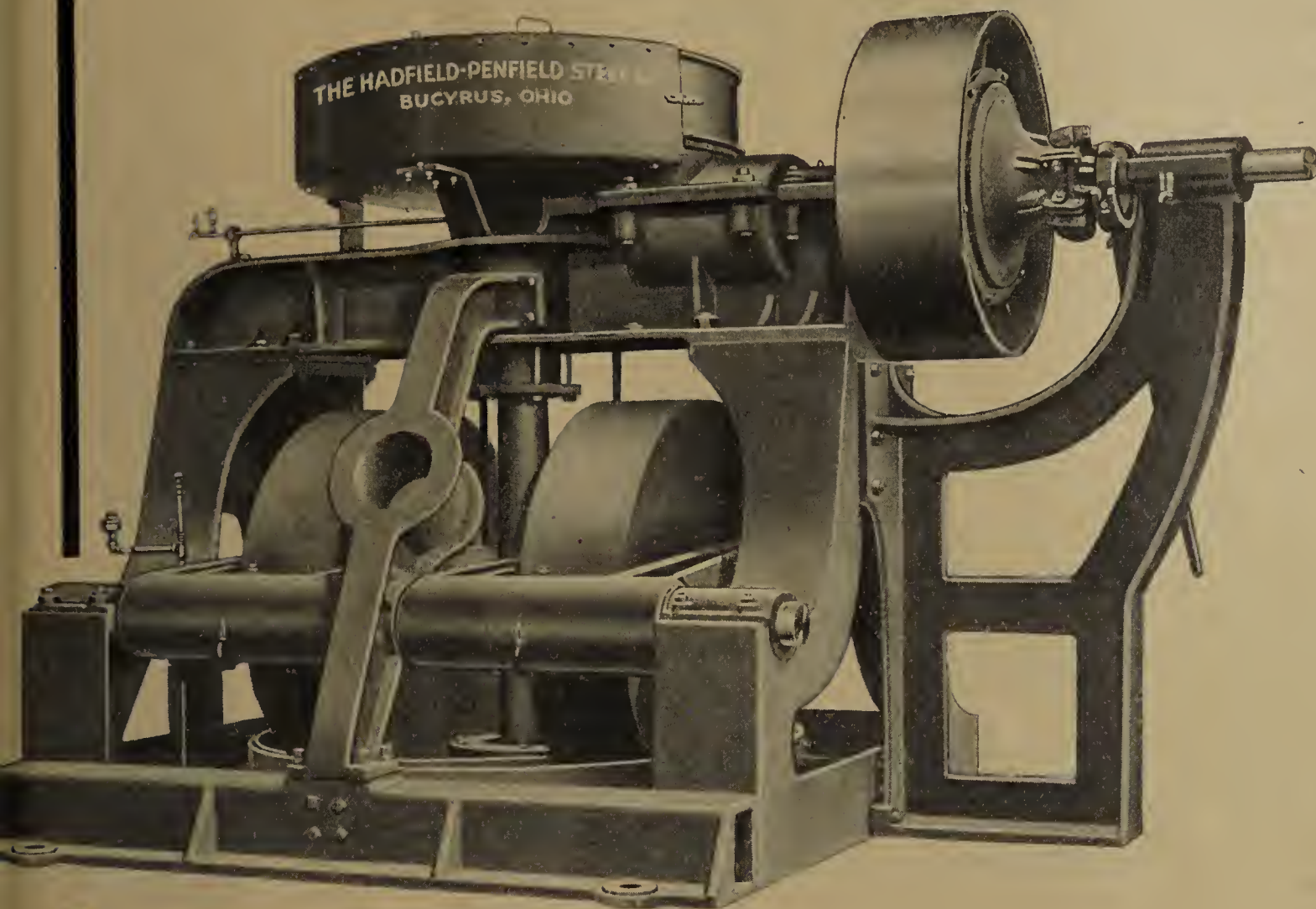
A MID-SEASON INVENTORY SALE.

An immense poster showing various machines and equipment, together with specifications and prices, announces the Mid-Season Inventory Sale of "Arnold-Creager" and "Martin" brick machinery. This offer covers a limited number of machines as specified, orders being subject to prior sale. All machinery and equipment fully guaranteed and shipped subject to inspection and usual thirty-day terms to purchasers entitled to credit. These statements were made in the poster issued by the Lancaster Iron Works, Lancaster, Pa. Those desiring information regarding this unusual sale are requested to write the Lancaster Iron Works for complete details.

GERMAN ARTIFICIAL GOLD.

Because wide circulation has been given a report that German chemists had learned to make gold artificially the U. S. Geological Survey has been moved to issue a special bulletin setting forth that there is no occasion to fear artificial gold. Reference is made in this bulletin to a statement that F. S. Emmons of the U. S. Geological Survey claimed to have made synthetic gold from silver dollars many years ago. The bulletin says Mr. Emmons never made any such claims and the statement is absurd. No one has ever yet succeeded in making gold or of obtaining it from any other chemical element. It is pointed out that were it possible to make gold the process would be so difficult and costly as to make the gold far more expensive than the natural metal. In other words, and on the authority of the U. S. Geological Survey, there ain't no such animal as artificial gold.

FIVE NINE-FOOT DRY PANS IN ONE



The American No. 384 Grinder

This is an extraordinary Grinder. It combines the capacities of four or five ordinary pans, saving the men on four pans. Saves the power of three pans and the space of three pans. No screen plates to replace. Does thorough work. Will handle from 50 to 75 tons of material per hour. If you can use a big capacity Grinder you will save a lot by installing the American No. 384.

We have other quality machines producing quantity of output at a minimum cost. Write for description of any Clayworking Machinery or Appliances.

The Hadfield=Penfield Steel Co.

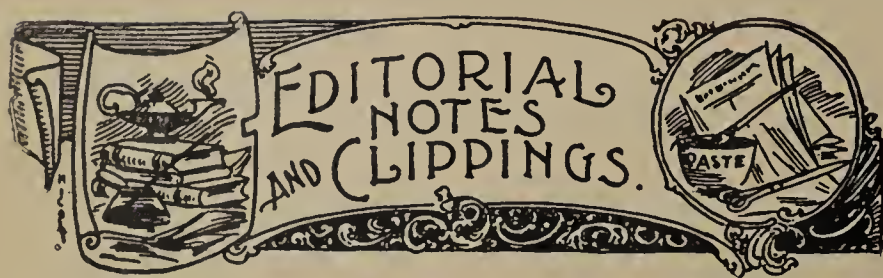
Bucyrus, Ohio

Formerly

The American Clay Machinery Co.



Mention THE CLAY-WORKER.



The L. C. Isenhour Company, of Colon, N. C., plans to erect a plant soon for the manufacture of tile and brick.

The Woods & Lloyd Clay Products Co., at Pittsburgh, Pa., was slightly damaged by fire September 6.

The plant of the Kingston Brick Company, Bristol, Tenn., closed down the latter part of August on account of shortage of coal.

The Board of Public Works of Holyoke, Mass., recently awarded a contract for 200,000 paving brick to the Metropolitan Paving Brick Company of Canton, Ohio.

The Rochester Brick & Tile Manufacturing Co. of Rochester, N. Y., has filed a certificate announcing the reduction of capital stock from \$84,000 to \$24,000.

The New Brick & Tile Co. will build a modern brick-making plant at Easton, Md., on which they will spend about \$50,000. C. Fletcher Clarke is secretary of the company.

The Bowerston Clay Products Company, of which G. H. Johnston is president, S. B. Boor, vice-president and J. C. Lyons, treasurer has been organized at Bowerston, Ohio.

The Felstone Company has been incorporated at Ashville, N. C., with a capital of \$100,000 and will manufacture urns, vases, etc. The incorporators are Marshall Gravatt, Gustaves, C. Reininger and Blair Taylor.

The Pine Hall Brick Company has been incorporated for the manufacture of shale brick at Pine Hall, N. C., with C. L. Lester as general manager. The company purchased 125 acres and the plant of the Dan River Brick Company.

Medina Clay Products Company, with a plant at Chippewa Lake, Ohio, was recently organized for \$200,000; elected officers as follows: B. S. Puritan, president; J. J. Puritan, vice-president; B. L. Cassady, secretary-treasurer and Leo L. Cassady and J. F. Townsend.

Mr. M. G. Babcock, formerly of the Pittsburgh office of the Laclede-Christy Company, has been transferred to their Rochester plant, to handle the sales of all glasshouse refractories manufactured there. Mr. Babcock's territory will comprise all pot glass manufacturers in the United States and Canada.

The Knox Porcelain Company has been incorporated at Knoxville, Tenn., with \$370,000 capital stock. Work will at once be started on the erection of a three-unit plant for the manufacture of electrical procelain products. J. N. Houser been elected president of the new concern; O. C. Duryea, has been elected president of the new concern; O. C. Duryea, vice-president; V. W. Kelsey, secretary, and Robert H. McCon-

nell, treasurer. In addition to these officers are H. M. Johnston and Howell J. Davis.

We are advised that R. W. Askin, of Windsor, N. C., is interested in the purchase of machinery for the manufacture of sand-lime brick.

The Johns Brick & Tile Co. has been incorporated at Dover, Dela. to mine fire clay and manufacture brick. The company is capitalized at \$100,000.

The Morton (Ill.) Pottery Company is the name of a new concern recently organized with \$50,000 capital stock. They will manufacture a line of yellow ware.

Edward Hunn is at the head of a new company being organized at Marysville, Cal., for the manufacture of brick. The company owns a fine deposit of clay suitable for making a good building brick.

The Washington Brick & Terra Cotta Co., Washington, D. C., of which John H. Miller is treasurer and manager, has been closed down for a short time owing to the coal shortage. They took advantage of the shut-down to make some needed repairs, and are now running again.

The Interlocking Tile & Sewer Pipe Company has recently been organized at Oakland, Cal. The company owns over three hundred acres containing deposits of fine clay suitable for manufacturing building tile and sewer pipe and conduits. R. J. Dyer, of Oakland, is the inventor of the tile, and is at the head of the company.

Fire which originated from crossed electric wires almost completely destroyed the plant of the Excelsior Brick Company, Montgomery, Ala., August 25. Frank Rhodes, president of the company, estimated the loss at \$30,000, on which there was very little insurance. Mr. Rhodes immediately announced the plant would be rebuilt without any unnecessary delay.

J. W. Holmes, a well-known brick manufacturer of New England, died at his home in New Britain, Conn., recently. Mr. Holmes was 73 years old and had been engaged in the brick business since 1896. He has been identified with the New England Brick Exchange, was a director and stockholder in the Central New England Brick Company, and owner of the Federal Brick Company.

The Federal Potteries, Incorporated, has been incorporated by J. T. Martin and others of 332 S. Michigan Avenue, Chicago, Ill. The new company will manufacture general ceramic wares, stoneware and insulators, etc. Walter Crow, Inc., will have charge of the construction of the plant, purchasing machinery and equipment. The Crow Company is located at 327 S. LaSalle Street.

Plants of the Illinois Brick Company, Chicago, Ill., are reported operating at capacity as a result of the active building operations in Chicago and vicinity. Capacity operations are expected to result in profits sufficient to build a surplus from which dividends could be declared in October. It has been predicted that a 6 per cent rate will be declared at that time. The company about broke even on operations in 1921 as the \$404,859 loss which wiped out the surplus and substituted a deficit of \$349,000 was due chiefly to depreciation. The company has changed its method of writing off charges, it is said;

(Continued on page 282)

"Tecktonius" Kiln Appliances

Insure maximum of kiln stability, economy and production

We offer a Complete Set of Plans and Specifications for
28 ft., 30 ft., 32 ft. or 36 ft. Tecktonius-Vogt Kiln for \$15.

Remember—We manufacture crown covers, ventilators, iron bands and plates, "grateless" grate furnaces, kiln band fasteners, wall guides, and many other accessories.

Write for catalog.

E. C. TECKTONIUS MFG. CO.

The Standard of Excellence
in Kiln Construction,
Operation and Burning.

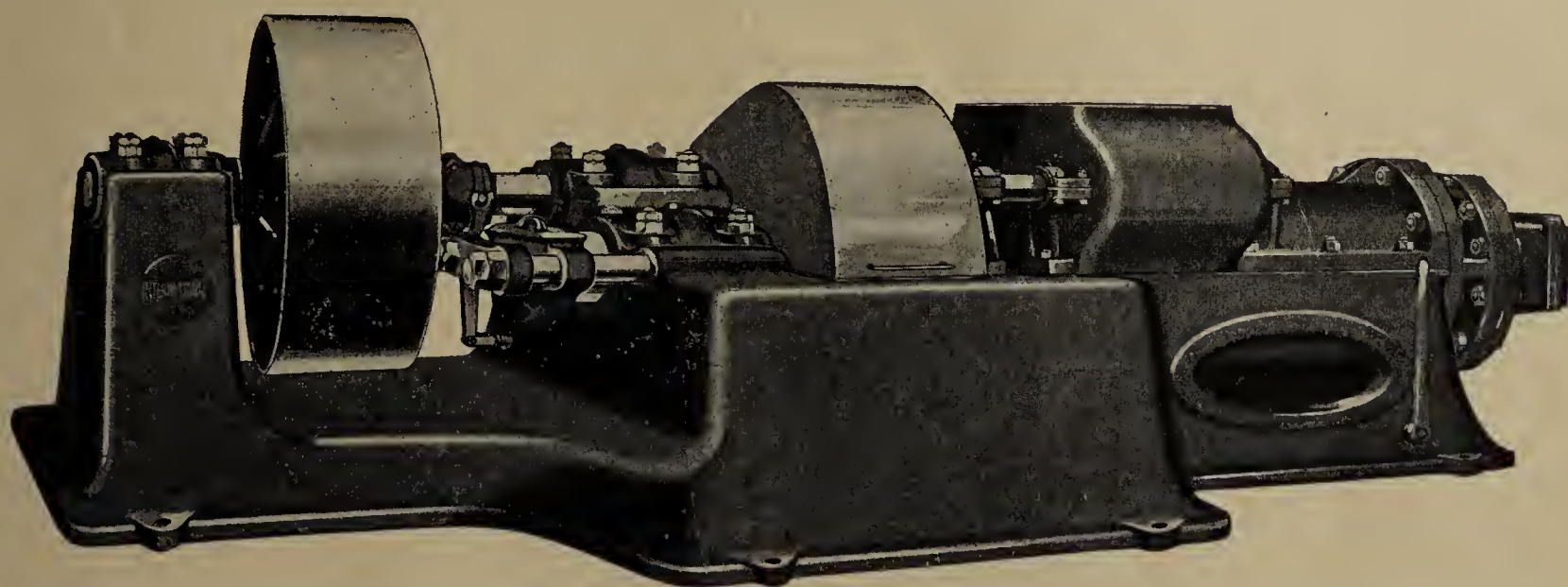
Our prices will interest you.

Racine Junction, Wis.

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AUGER MACHINES

PATENTED



Shepfer and Moomaw Bros.

Sugar Creek, Ohio

have just installed a
435 machine and

Complete International Equipment

Ask for Bulletin 30.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

EDITORIAL NOTES AND CLIPPINGS—Continued.

it is now charging off depreciation every month so there will be no large year-end readjustments in the future.

M. F. Ackerman has been making a number of experiments at Bade City, Fla., with the clay in that vicinity, with a view of starting a brickmaking plant there.

W. L. and J. E. Reece recently purchased a large tract of land at Graysville, Tenn., on which they will erect a large hollow tile plant. The plant will be operated under the name of the Dixie Coal and Clay Products Company, with headquarters at Chattanooga, Tenn.

J. P. Cahoon, Chester Cahoon, W. D. Livingston, J. A. Rockwood and N. J. Hansen are interested in the organization of the Utah By-Products Company, of Salt Lake City, Utah, to manufacture gas and bituminous by-products. The Salt Lake Pressed Brick Company will be one of the first companies to install one of the units of the new company.

The Purington Paving Brick Company's plants at Galesburg, Ill., which had been closed down for some time, due to the coal shortage, opened up the first of September with a force of from 300 to 400 men, and a fine prospect of working steadily for some months to come. One of the first orders to be turned out will be 200,000 paving brick for the city of Abingdon, Ill.

We are advised that the B. Mifflin Hood Brick Co., of Atlanta, Ga., is planning to establish, some time this year, a large plant for the manufacture of a high quality impervious light face brick, that the company states will be the only plant of its kind in the southeast. Everything is in readiness but definite details cannot be announced, the company advises, for another month.

Plant No. 1 of the Sioux City Brick & Tile Co. at North Riverside, Sioux City, Iowa, is now being operated entirely by electricity. Manager D. P. Mahoney announces the capacity of the plant is now 110,000 brick per day. Five months' time and \$100,000 have been spent in making the changes, which make the plant one of the best common brick plants in the middle West.

The Cin-Nor Pottery Company, of Cincinnati, Ohio, has been taken over by the Acton Tile & Pottery Company. Garden pottery, lamps, Faience mantel, floor tile and ornamental flower vases will be manufactured. The officers of the company, J. O. Hesselbrock, president; W. J. Mahoney, vice-president, and A. Mahoney, secretary and treasurer, are all experienced in the manufacture of clay products.

The plant of the Moberly Paving Brick Company at Moberly, Mo., has been shut down and about 75 men have been thrown out of employment. The step was made necessary by the shortage of coal. The company will reopen its plant as soon as it is able to get fuel again. The plant has plenty of brick on hand and it is not expected that the closing will delay the construction of the brick road between Moberly and the Moberly Country Club. No work is being done on

the road at present because the contractors can not get sand and gravel.

The Shale Brick Company, Columbus, Ohio, suffered a \$2,000 loss when their plant caught fire from an overheated kiln.

Heartt & Lawton is the name of a new firm which has taken over the Belknapp brick yard at St. Clair, Mich. The plant is being put in shape to operate as soon as possible.

W. T. Harrison & Co., 111 First Ave., Nashville, Tenn., write they are in the market for a 7 to 9 foot dry pan. A second-hand pan will do, but it must be in good condition.

The Mohawk Pottery Company, Perrysville, Ohio, has made an assignment to one of its heaviest creditors, W. E. Greisinger, Medina, Ohio. A new company may be formed to take over the plant and manufacture sanitary wares.

We are advised by our St. Louis scribe that nearly all of the brickmaking plants there are busy filling orders, but nearly all are short of labor. Skilled and unskilled labor is very scarce in the building lines, so that only about fifty per cent of the works coming off the boards is being bid on, as everything is so uncertain.

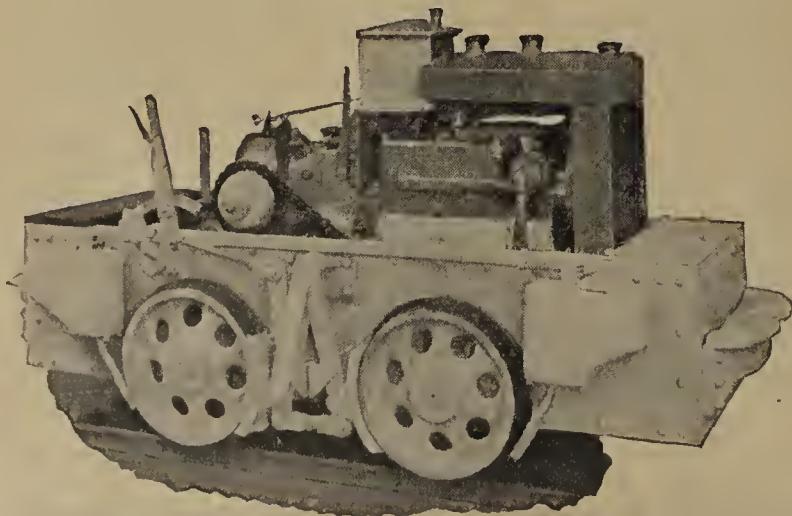
The Drury Brick & Tile Company, of Burlington, Vt., recently contributed its quota toward relieving any brick shortage which might exist in the New York market by shipping 600,000 brick by water. The brick were loaded on two barges which were towed down Lake Champlain to the canal, through the canal to the Hudson River and down the Hudson to the New York piers.

The Kenyon Brick and Tile Company is installing an additional press, dry pan and pug mill at the plant in Oklahoma City, Okla. The capacity of the plant will be doubled by the additional equipment. A. W. Kenyon, president of the company, says his business has been steadily growing for some time, and they are compelled to work the plant overtime to keep up with their orders.

Jotham Post, East Williston, Long Island, writes he is a busy man these days, filling the demand for brick. They can hardly take time to let the kilns cool. He ships all his brick to job by auto trucks, and says he is not alarmed over any effect the Untermeyer brick from Germany may have on his trade. His only worry is the coal supply, and even that seems to be growing less serious. There is plenty of coal to be had now, but the price is excessive, ranging around the \$7.50 per ton rate, and to that must be added high freight charges.

William Lucas, one of the pioneers in the brick industry in New England, died at his home in Portland, Me., recently. He came to America from Ireland, and took up his residence at Dover, N. H., where he went into the brick business, and two years later established a brick plant at Portland, Me. He introduced the brick and pallet system in New England. He was a heavy stockholder in a number of other brickmaking concerns and had interests in varied lines. He had been a member of the N. B. M. A. for many years. Mrs. Lucas survives.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

CLEVELAND, OHIO

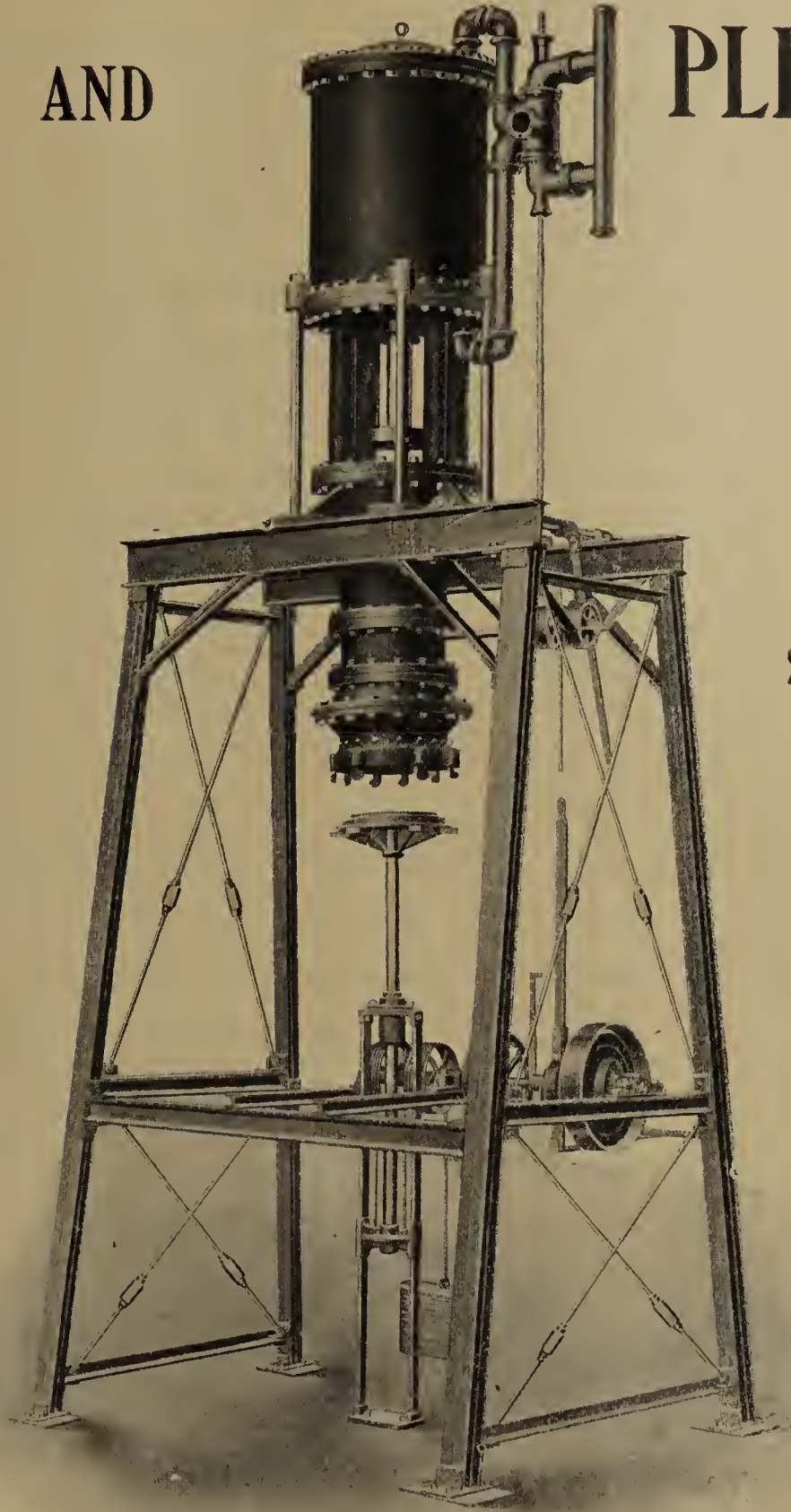
SPEED AND

PLENTY of it.

MODELS

**42 & 44 inch
PRESSES**

**SEWER PIPE
&
TILE.**



“OUR PRODUCTION RECORDS WILL INTEREST YOU”

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
801 Monadnock Bldg.
Chicago, Ill.

**DISTRICT OF COLUMBIA BRICK PLANTS CANNOT MEET
DEMAND—BUILDERS ATTEMPT TO SECURE
BRICK AT DISTANT POINTS.**

THE PRODUCTION of brick for the Washington market has been and remains far below the demand, and is taxing beyond capacity all of the plants in this vicinity. At this writing none of the plants has an adequate supply of coal several managing to keep going through constant efforts to obtain coal in daily supplies. The District of Columbia section is in a peculiar situation in the matter of securing coal during the present stringency the priority and distribution for much of the balance of the country being looked after first.

Rather than suspend work discharge large numbers of bricklayers and delay related processes of construction, several of the largest builders have succeeded in attempts to secure small supplies of brick from out-of-town points in West Virginia, Maryland, Pennsylvania and other nearby states. Existing conditions in most of these places do not permit of the exporting of brick to Washington in any considerable quantity, however, and what little has been received here has cost the purchasers a good, round price and rather stiff transportation rates.

About 75,000 brick daily are at present being produced for the Washington market by one of the District plants, which has kept its force of workmen on the job after regular hours and on Sundays. This firm's office is being besieged with persuasive requests by worried builders for additional consignments of brick, but without success. "I cannot begin to meet the demand," explained the head of the company. A rival concern a few days ago asked this

producer if he could spare any brick to help him supply his customers, but in view of the producer's own difficulties aid could not be extended.

One of the smaller plants, which has been particularly unfortunate in the matter of securing coal, is for the time being refusing to book further orders for brick unless the buyer guarantees to furnish the coal to produce them.

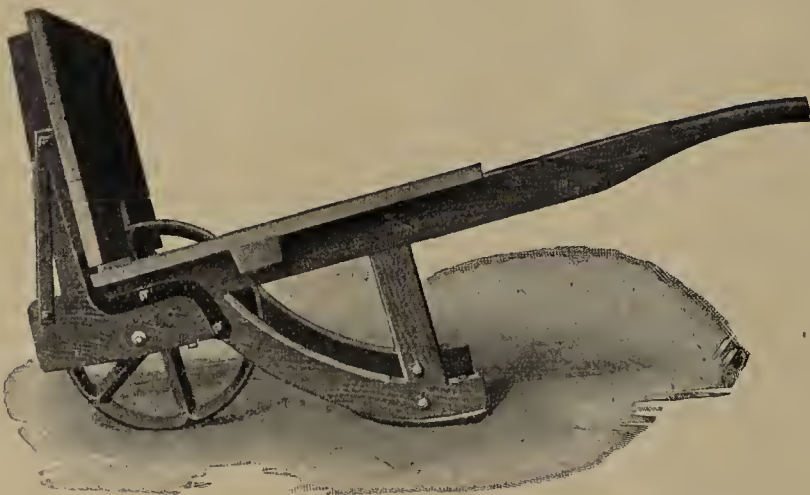
ALTHOMAR.

ILLINOIS UNIVERSITY ISSUES NEW BULLETIN.

In 1919 there was published by the Engineering Experiment Station of the University of Illinois a bulletin, No. III, dealing with the forms in which sulphur occurs in coal. The research work in connection therewith was conducted in the Chemical Laboratory of the University of Illinois by S. W. Parr and A. R. Powell, who developed successful methods for determining quantitatively the different chemical forms of sulphur in coal.

Bulletin No. 125, by H. F. Yancey and Thomas Fraser, just issued by the Engineering Experiment Station, deals with the manner of occurrence and the distribution of the various forms of sulphur in the coal bed. The experimental work was undertaken as a part of the United States Bureau of Mines plan of research on coal preparation, and the application of the information secured to the problem of producing cleaner coal was the principal objective. The solution of this problem must of necessity rest to a considerable extent upon an intelligent knowledge and appreciation of the physical and the chemical forms in which sulphur occurs in a particular coal, and how it is distributed through the coal in the bed.

Copies of this Bulletin No. 125 may be had without charge by addressing the Engineering Experiment Station, Urbana, Ill.

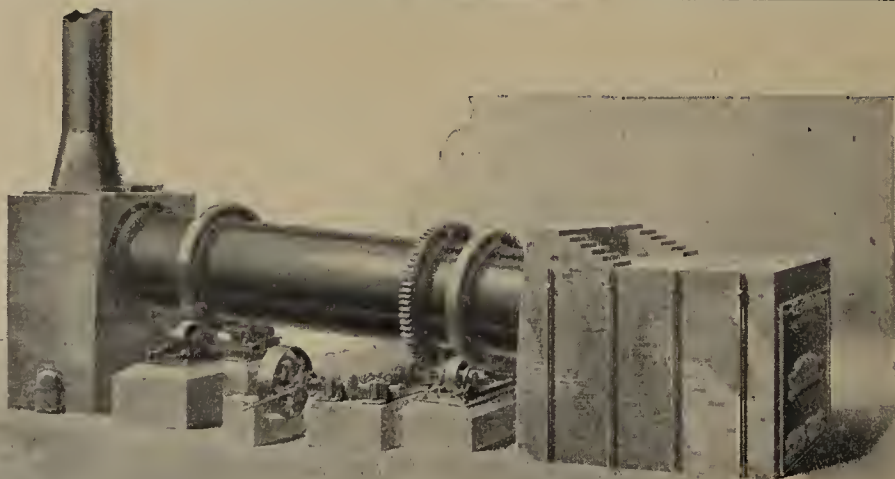


INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

**Toronto Foundry & Machine Co.
Toronto, Ohio**



ROTARY DRYERS

We manufacture a line of Rotary Dryers covering a large range of sizes and capacities and adapted to drying clays, shales, sands, marl, slurries, fertilizers, crushed limestone and for calcining fire clays, roasting ores and handling a great variety of other materials from which moisture must be removed at low cost, or in which special heat treatment is required.

**The Hadfield-Penfield Steel Co.
BUCYRUS, OHIO**

Burning Clay Products is the **Most Important Problem** of all in the **Industry**. If the **Ware** is not well burned it has no **commercial value**. Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.

What's "Under the Hood"
of
Brown Pyrometers



First of a series
The movable element

Watch making has no problem like this. This assembly requires 13 parts and 43 operations. It weighs the same when finished as the common pin—35 to the ounce.

Three layers of 50 turns (150 turns) of .003" copper wire are heavily cemented together and baked and the form removed. To both ends are cemented diminutive aluminum brackets that form an anchorage for the ground steel pivots and the hair springs. The springs, pivots and the hollow aluminum pointer are then attached.

With jewel bearings at each end having a normal bearing speed almost too slow to be measured, and weighing 1/1750 oz. per ohm resistance—this is perhaps the most sensitive, most nearly dead-beat, most sturdily constructed and longest lived of all pyrometer movable elements.

THE BROWN INSTRUMENT CO.
Wayne Junction Philadelphia, Pa.

New York Pittsburgh Detroit Cleveland Chicago
St. Louis Denver San Francisco Los Angeles Montreal

Brown Pyrometers
Most used in the world



With Chase Flexible and Reversible Bearing
and Folding Deck.

Single, Double and Triple Deck Dryer Cars,
Transfer and Dump Cars, Turntables,
Switches and Trackage.

The Chase Foundry & Mfg. Co., Columbus, O.

SUMMER EXCURSION OF A. C. S.

(Continued from page 247.)

accompanied the party and saw to it that every one was taken care of in the proper fashion.

We arrived at Verona at 2:40, where autos and wagons were waiting to convey us over several miles of newly prepared roads into the wilds, where we inspected the Richardson feldspar quarries with R. F. Segsworth and E. Townsend as guides. Eight of the party, tempted on the way by the inviting pure blue, crystal waters of the several lakes, slipped away from the crowd and enjoyed a swim in Thirteen Island Lake, before returning to the train for Kingston, where autos were in waiting on our arrival in that historical city. A procession with an escort bearing the American and British flags hurriedly circled the city and landed the party at the Kingston Council, where a banquet was given through the courtesy of the Kingston Council. The speakers were Sir Archibald Howald, head of the Royal Military Academy; Dr. Taylor, of Queens University; Dr. Keele, of the Department of Mines, and Messrs. Hostetter, Segsworth, Beecher, Omannay and Birke. A visit to the town hall where we inspected the beautiful memorial windows depicting various battles of the World War in which the Canadian troops had a prominent part, was the "night cap" before retiring to our berths on the train bound for Toronto.

During breakfast the next morning at King Edward Hotel mimeographed programs of the day's events were furnished by M. F. Gibson, chairman of the Toronto Entertainment Committee. Motor buses took the entire party to the Harbor Dock, where launches were in waiting. Before starting on the trip the Harbor Commissioner, the host for the morning, gave a talk on the fine \$49,000,000 harbor, the trip around which took up the remainder of the morning.

The ceramists lunched at the King Edward Hotel and then divided into groups for the trips to the Standard Manufacturing Co. plant, Jefferson Glass Company factory, or sight seeing trip, visiting Queens Museum, Parliament Buildings and the University of Toronto, under the chaperonage of Messrs. Gibson, Cote, Robertson, Miller and Gordon Keith, the Toronto committee.

In the evening the ceramists were the guests at a delightful dinner given by Mr. and Mrs. Abel Hansen, of the Ford Porcelain Works, Perth Amboy, N. J. The speakers on this occasion were Brigadier General Mitchell, Dean of the Department of Applied Science University of Toronto; Frank Riddle, president of the American Ceramic Society and M. F. Gibson. Following the dinner some of the party invaded "Sunnyside," the Coney Island of Toronto, while others inspected the fine collection of ceramic and glass wares, paintings, etchings, engravings, etc., of Mr. Segsworth at his home.

Early Saturday morning the party went by boat to Hamilton, where with H. F. Dingledine, of the National Fireproofing Co., as guide a hurried inspection was made of the plant of the Canadian Porcelain Company's plant, where electrical porcelain is manufactured, and also the factory of the Libby Owens Sheet Glass Company, before going to the Royal Connaught Hotel, where lunch was served.

The remainder of the day was given over to "button-hole" talks, and good-byes and well wishes, as the members departed for their homes, east west, north and south.

HOOSIER BRICK EXHIBITS WINS PRIZE.

O. M. Booher, assistant secretary and general manager of the Kokomo (Ind.) Brick Company, is feeling pretty good these days over an award of second prize which was given the company's exhibit at Kokomo's Industrial Exposition held in August. There were more than 150 other exhibits representing various industries, which were viewed by nearly 100,000 people.



**BUILT OF BRICK IN 1684
AND STILL USED BY
THOUSANDS**

The Friends Meeting House in Philadelphia, built in 1684, is another monument to the wonderful age resisting and beautiful weathering qualities of brick. In that same year, 1684, brick making commenced in Amboy, New Jersey.

The development of this country has always been followed by the brick industry. Wherever men built towns or cities, the brickmaker was called for and needed because the pioneers of this nation designed their important buildings to **endure** and they naturally selected brick as the ideal all 'round material.

Homes and buildings of all kinds are still logical outlets for this most thoroughly proven building material. Architects and all others connected with erecting or buying buildings should be made to realize the supreme value of modern brick made by improved methods and kept up to improved standards. They should use brick and every individual brick manufacturer should help them to make them **THINK OF BRICK FIRST.**



**"Increase
Production~
Cut Costs~
Boost Sales
with
AutoBrik**

Suppose you could boom your business so well that you had to hire extra trucks to keep up with deliveries? The AutoBrik Machine will put you in position to do just that thing.

The AutoBrik Machine is capable of six to ten thousand bricks per hour. It cuts costs by reducing labor expense—an operator and pallet man only are required to keep the AutoBrik Machine at capacity production. The balance of the usual crew simply are not needed—the AutoBrik Machine does their work—does it better, faster and never gets tired.

The AutoBrik Machine is the efficiency engineer of brick making. Steadily, dependably, it automatically tempers the clay, presses it into the molds, bumps and dumps the molds—**uniformly**—delivers the pallets of brick to a conveyor and returns the molds, automatically re-sanded, for refilling.

AutoBrik Machine

Will pay for itself in about a year. Read the complete specifications in our catalog. Price and other details furnished promptly upon request.

Lancaster Iron Works, Inc.

Lancaster, Pennsylvania, U. S. A.

Brick Machinery Dept.

James P. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick Plants for the Manufacture of Brick by the Soft Mud Process.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Written for The Clay-Worker.

MISSOURI HAPPENINGS.



MANAGER BARR OF THE Moberly Brick Plant at Moberly, Mo., has agreed to furnish the ground necessary for the establishment of an athletic field that will be established at Moberly under the direction of the Lions Club. It will be equipped especially for aid and encouragement of the students in the high school and for the accommodation of visiting schools, especially college teams who are planning to select Moberly as the scene of their football contests.

The Haydite Company of Delaware, with a capital of \$2,000,000, has been incorporated to do business in Missouri, with headquarters in Kansas City and with a capital stock of \$65,000. The company will manufacture, sell, buy and deal in "Haydite," a certain patented process for burning clay, shale and other argillaceous materials. The shareholders are: B. W. Ballou, D. R. Lynde and C. L. Squires.

Philip Strop, 82 years old, retired brick manufacturer and one of the oldest residents of St. Joseph, died at the home of his son, Judge Charles F. Strop, Noyles Boulevard and Frederick avenue. About 1870, Mr. Strop engaged in brick-making and conducted a brick yard at Twenty-fourth and Penn streets, on the old Strop homestead. He manufactured the brick for many of the early day buildings in St. Joseph. Mr. Strop retired from the business in 1900. He was a veteran of the civil war and served in the Union army. He was born September 17, 1840, at Louisville, Ky. When sixteen years old he came to St. Joseph and had resided there since.

A. F. Becker of the Fulton Fire Brick Company at Fulton, Mo., spent two weeks' vacation in Indianapolis, Ind., making the trip to that city by automobile.

H. H. Howard of Chicago has arrived at Wellsville, Mo., and has entered upon his duties as general superintendent of the plant of the Wellsville Fire Brick Plant. T. F. Smith also has begun his duties as yard superintendent.

Officials of the Fulton Fire Brick Company at Fulton, Mo., continue to report a very satisfactory business despite the coal and railroad strikes and employment has been given to a large force of men during the entire period of labor troubles. The company owns its own coal mine and is well supplied with fuel although for a time it appeared as if the miners would go out on a strike, staging one walkout but coming back after being out only a short time. The trouble was occasioned by the shipment of coal to outside points. This has been amicably settled and a new contract has been entered into between the mine operators of Fulton and the men of the local union. The miners at Fulton do not hold membership in the United Mine Workers organization.

Lonnie Wyatt, who was injured in an accident at the plant of the A. P. Green Fire Brick Company at Mexico, Mo., has just undergone an operation to correct the trouble that has resulted. The operation was a very delicate one, but it is believed it has been successful; however, it probably will be three months before it is apparent whether or not the operation which consisted of removing pressure on the spinal cord by removing half of the third cerebral vertebra and a fourth of the fourth cerebral vertebra, was entirely successful.

The payroll of the A. P. Green Fire Brick Company of Mexico, Mo., in its operations at Fulton, Mo., has reached \$4,500 a week, much money being spent in mining clay at a mine it has established in Fulton. The company also is paying a large sum of money to coal miners in Fulton, who are furnishing the plant with the coal necessary to keep in operation. The Green Company is paying the miners a bonus of five cents for every bushel that they dig for the Mexico plants of the concern.

MISSOURI.

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ORIGINAL
Boss
SYSTEM

Boss Ten-Hour Dryer

ORIGINAL
Boss
SYSTEM

Will dry your daily output in TEN HOURS with either WASTE HEAT or EXHAUST STEAM.
Less cost to build—Less cost to operate.

Boss System of Burning

Brick or hollow ware burned in ONE-HALF LESS TIME and ONE-HALF LESS FUEL. Increases your kiln capacity. Dryers and kilns designed and built. Let us solve your drying and burning problems.

ORIGINAL
Boss
SYSTEM

J. C. Boss Engineering Co.
Elkhart, Indiana

ORIGINAL
Boss
SYSTEM

YOU HAVE KNOWN FOR YEARS THAT

RICKETSON'S MORTAR COLORS

are pure and brilliant in tone, economical in application, absolutely reliable, and a permanent guarantee against fading and washing.

Why Not Insist on Having Them?

They are the acknowledged best for all uses---Mortar, Brick, Cement, Concrete and Stone.

Red, Brown, Buff, Chocolate and Black
RICKETSON MINERAL PAINT WORKS
MILWAUKEE, WIS.

CARS CASTINGS DIES

In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clayworkers' castings and Dies of all kinds for sewer pipe press and machines, Etc. Write for Prices

Wm. E. Dee Co. 30 N. LaSalle St.
Chicago, Ill.

Over 60,000 In Use

Oil Burners For All Types of Kilns



Perfected to
The Minute
HEAT TELLS!

Write us today

"Be Sure It's Schurs"
SCHURS OIL BURNER CO.

Established 1905

Los Angeles, Cal., U. S. A.

Classified Advertisements

FOR SALE, WANTED, ETC.

Advertising rates in this column 35 cents a line, or 6 cents a word each insertion; about six words make a line. Cash should accompany the advertisement to insure insertion. No ad inserted for less than \$1.00.

WANTED, ETC.

WANTED.

One Raymond Perfection Repress. State condition and price. Address, REPRESS.
91 d care Clay-Worker.

WANTED.

Sixty triple deck 24-in. gauge steel dryer cars, for drying hollow tile. ATHENS BRICK & TILE CO.
91 d Athens, Tex.

WANTED.

Experienced hollow tile superintendent to operate plant in Province of Quebec, Canada. Please apply, stating experience and salary expected to CANADA,
8 2 d Care Clay-Worker.

WANTED.

Superintendent for brick plant making common, wire cut, face and shale paving brick. Must understand machinery and burning. Practical, experienced man desired. Write X. Y.,
91 d care The Clay-Worker.

WANTED.

Dry pan from 7 to 9 ft. Must be in good condition and cheap. In answering ad., please give the condition, the make, point of location and the manufacturer's number. Address, W. T. H.,
73 c Care The Clay-Worker.

WANTED.

Position as manager or superintendent of high grade face brick, rough texture, common or fire brick plant. Been in charge of large and modern plants. Best of references. Address, L. M. D.,
83 c care Clay-Worker.

WANTED.

To purchase plant capable of making high grade rough texture face brick, located in Central Freight Association territory. Mention extent of shale owned by plant. Address, RED FACE BRICK,
91 d care The Clay-Worker.

WANTED.

Experienced inside foreman for brick and hollow tile machine room. THE ALLIANCE BRICK CO..
91 d Alliance, Ohio.

WANTED.

By New York Sales Representative. Representative covering New York and adjacent territory open to represent manufacturer hollow tile, sewer pipe and other clay products. Commission basis. Address, REPRESENTATIVE,
91 cm care Clay-Worker.

WANTED.

Triple deck tile dryer cars, 24-in. gauge. 16-pound T rails. Two 24-in. gauge turn tables, single track. One 30-in. gauge turn table, single track. Tile and brick cutter. D'HANIS BRICK & TILE CO.,
93 c D'Hanis, Texas.

WANTED.

Experienced man as plant manager for fire brick plant. One who has had experience with New Jersey clays, who has ability to handle men, getting maximum production at minimum cost. Reference required, replies treated confidential. Personal interview will be arranged. A good position for the right man. Address, H. C.,
91 cm care The Clay-Worker.

WANTED.

A first-class superintendent for a hollow ware plant, near a large city. Must understand adjustment of dies on auger machines as well as drying and burning. State in first letter experience, name of plants employed, kind of ware and salary expected. Only practical men need apply. Must have references. Address, D. C.,
92 d care The Clay-Worker.

FOR SALE

FOR SALE.

A Bargain for Enterprising Brickmaker. An Illinois silica brick plant located near St. Louis. Practically new and with a small expense can be put in shape to run. Plenty of clay, railroad siding and good demand. Will be sold at a sacrifice, with suitable terms to right party. Address, SILICA,
91 dm care Clay-Worker.

FOR SALE.

One 100-horse power H. S. G. steam engine in first-class condition. Price \$800.00. Address, CORAOPOLIS BRICK & TILE CO.,
73 c Main and Wabash, Pittsburgh, Pa.

BUSINESS OPPORTUNITY.

Man or men to complete financing brick, tile and hollow ware proposition. 178 acres in Mercer county, Pa. Authorized capital, \$100,000. Stock sold, \$20,000. Excellent shipping facilities. Address E. C. BOYD, Treas.,
92 dm Orangeville Savings Bank Co., Orangeville, Ohio.

FOR SALE.

Two horizontal tubular boilers; one 150-h.p. engine; one 4-h.p. vertical engine; one 8-ft. fan with 8x12-in. direct connect engine and 10,000 feet radiation; dryer equipment; one No. 25 Brewer brick machine; one pug mill; one disintegrator; one brick cutter, and other machinery.

Reason for sale—discontinuing brick manufacturing.

THE MAMER CO.,
83 cm Benton Harbor, Mich.

FOR SALE.

One Plymouth 3 ton gasoline locomotive, in excellent condition. Two American 9 ft. dry pans. Two new steel leg bucket elevators for same. One 70 K. W., 250 Volt D. C. generator. One new 40 H. P. A. C. motor. Three pit cars. One new 20 K. W. 125 Volt D. C. generator. 100 ft. heavy line shafting with all fittings.

BRADFORD BRICK & TILE CO.,
81 d 2 Main St. Bradford, Pa.

FOR SALE.

An up-to-date brick and tile plant, equipped with boiler and engine, belting and mill. Everything necessary except dryer and kilns. Good houses, garage, office and sidetracks. Abundance of shale and clay on the ground. Good drainage. Also coal that can be placed at the plant at less than \$3.00 per ton. Our location is admirable, with splendid shipping facilities to Indianapolis, Cincinnati, St. Louis, Chicago and intermediate points. If not disposed of entire, will sell machinery separate, all of which is new, and modern. Never been used, of J. D. Fate make. Address, BARGAIN,
81 d Care The Clay-Worker.

Classified Advertisements.

FOR SALE.

A hollow block plant in Western Missouri. Modern equipment. Easy terms. Address.

G. E. N.,
73 c Care The Clay-Worker.

FOR SALE.

COMPLETE IRON WORK, FRAMES AND BANDS FOR SIX UP-DRAFT WARE KILNS, 16 FEET, 6 INCHES INSIDE DIAMETER.

MT. CLEMENS POTTERY CO,
72 cm Mt. Clemens, Mich.

FOR SALE.

Chambers end cut brickmaking machine of about 30,000 daily capacity. Cutter not included. One clay feeder

BOSTON BRICK CO.,
73 d South Boston, Va.

FOR SALE.

Several letters patent on air cell bricks or load bearing facing tile. For particulars write to,

JAMES P. WILLIAMS, Consult. Engr.,
Kings Highway at Maffit Ave.,
7 tf d St. Louis, Mo.

FOR SALE.

One 20-ton saddle tank Porter locomotive, 30-inch gauge; 6,000 feet 50-lb. rail and splices; 10 wooden one side dump cars, 30-inch gauge.

JOHN H. FRITZINGER,
215 Rector St.,
92 d Perth Amboy, N. J.

FOR SALE

AT A GREAT SACRIFICE.

The plant of the Dillehay Brick Co., original cost of which was \$150,000. Clay produces the finest of press brick. Railroad facilities ideal. Plant can be put in shape to earn 40 per cent dividend annually. For details address,

J. L. BUTLER,
73 cm Danville, Ky.

FOR SALE.

Nine-kiln plant making highest grade salt glazed hollow building tile, drain tile and face brick. Plenty of clay. Best sales location. Property and price too good to remain on the market long.

HAWKEYE CLAY WORKS,
81 cm Fort Dodge, Iowa.

FOR SALE.

Having installed electric power, we have to offer:

1 Bruce-Merriam 80 H. P., two cylinder vertical gas engine, natural or producer gas (Anthracite) with air pump and tanks. In good condition.

1 75 H. P. Sharp-Bassett Anthracite Gas Producer, complete with scrubber, used only about 10 months and in first-class condition.

1 3 H. P. W. E. M. Co. Gas Engine.

1 3x3½ Gardiner Air Compressor.

HALL & SONS, INC.,
69 Tonawanda St.,
73 d Buffalo, N. Y.

BRICK PLANT FOR SALE.

The plant comprises Mechanical and Dryer and other equipment to produce 25,000 to 30,000 Wire Cut Lug Face Brick per day, two Round Down-draft Kilns, 40 acres of land, 20 acres of which contains very large quantity of clay suitable to produce bricks ranging in color from Light Buff to Green (estimated at about 800,000,000 bricks). There is also on property a Brick Cottage and a Brick Veneered House.

Located alongside Grand Trunk Railway at Rymal, Ontario, between four and five miles of Hamilton, a rapidly growing City of 115,000 population in the midst of a large and prosperous dairy and fruit farming district, which would furnish a fine home market for Tile as well as Brick.

For further particulars and inspection apply to,

J. J. CONWAY, Authorized Trustee,
Merchants Bank Building,
73 dm Hamilton, Ontario.

FOR SALE.

New Tile and Brick Plant in Northern Michigan, recently built, with modern machinery, fine clay bed. Good demand in large unoccupied territory. Water and rail shipments. Address

WM. CHILDS, Secretary,
83 cm Cheboygan, Mich.

If...

You Want
to Sell
or Buy...

Second-hand Clayworking Machinery, Tile Mills, or anything pertaining thereto.

If...

You

Want a Man

for any position or a position in any connection with the Clayworking Trades use the

For Sale
and Want
Columns
of...

The...

Clay=Worker

RATES

RICHARDSON

For RAILS

Ready for immediate shipment; New and Relaying Rails, Spikes and Bolts; Frogs and Switches. Call, telephone, write or wire.

Richardson means Service.

Richardson
& Co., Inc.
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Pittsburgh, Pa.



The Parker-Russell
Mining and Manufacturing Co.
ST. LOUIS, U. S. A.

Fire Clay and Silica Products of Quality for Service---
Especially for Kiln Construction.

A REVIEW OF THE INDUSTRIES.

THERE COMES to hand in pamphlet form a statistical review of the clayworking industries prepared by Jefferson Middleton for the U. S. Geological Survey, being part of the mineral resources of the United States, and published in pamphlet form August 14, 1922. It covers the industries for 1919 and 1920, and furnishes many interesting details of the various divisions of the clayworking industry.

The first and general tabulation shows a list of 2,716 clayworking plants, which in 1920 produced an output valued at \$373,670,102. Of this total more than 71 per cent was represented by brick and tile, the exact figures on this classification being \$266,953,426.

Ohio was the leading state, followed by Pennsylvania, with New Jersey third, Illinois fourth, New York fifth, Missouri sixth, West Virginia seventh, and Indiana eighth. This is the usual line-up on the first rank states, but Virginia moved up and crowded Indiana out of seventh place, while Missouri moved up from eighth place to sixth place which shows that Missouri and West Virginia have been active in clay development the past few years.

Common Brick Production and Value.

The common brick industry, which has been the center of considerable attention as to quantity of production and probably future trend, is reviewed from 1911 to 1920 inclusive, and shows a decrease in quantity to a little more than half the 1911 production, and inversely an increase in total value that is nearly double the product of ten years ago. The explanation of this remarkable value showing in the face of lessened quantity is found in the fact that while common brick prices at the plant averaged only \$5.89 in 1911, they averaged \$16.95 in 1920, which made this the banner year in the value of common brick notwithstanding the production was only a little more than half that of 1911.

Face brick production through the same period shows a fairly constant holding as to quantity and is just about double in price. The quantity produced on face brick in 1920 was 786,614,000 with a total value of \$19,440,986 or an average of \$24.71 a thousand as compared with \$11.93 in 1911.

Development of Hollow Building Tile.

Hollow building tile shows an increase in total value which bespeaks a steady advance in quantity though the exact ton-

nage is not set forth. The total value of hollow building tile in 1911 was \$5,660,172, while in 1920 it was \$27,312,007. It is probable that in the development of hollow building tile is to be found part of the reason for smaller quantity of common brick used as this has come into quite an extent for wall construction in place of common brick.

The paving brick quantity, like that of common brick, has suffered a curtailment to practically half the earlier production, but it shows an increase in value the total value being higher in 1920 than any previous year. The paving brick production for that year was 468,494,000 valued at \$12,678,557 an average of \$27.06 as compared with \$11.72.

Tile, drain tile and sewer pipe all show sharp increases in production that ought to be shown. The chances are, too, that the total value but not enough to show increase in growth in when the figures for 1922 are available these will show sharp advances in production especially in sewer pipe.

Fire brick shows a value for 1920 four times that of 1911, and a value which perhaps will be in excess of 1922, because 1920 represents the peak period in refractory production. There are signs of recovery, however, and 1923 should bring a new era to the refractory division as well as a greatly increased demand for sewer pipe and a better showing in the drain tile business.

Marketing the Raw Material.

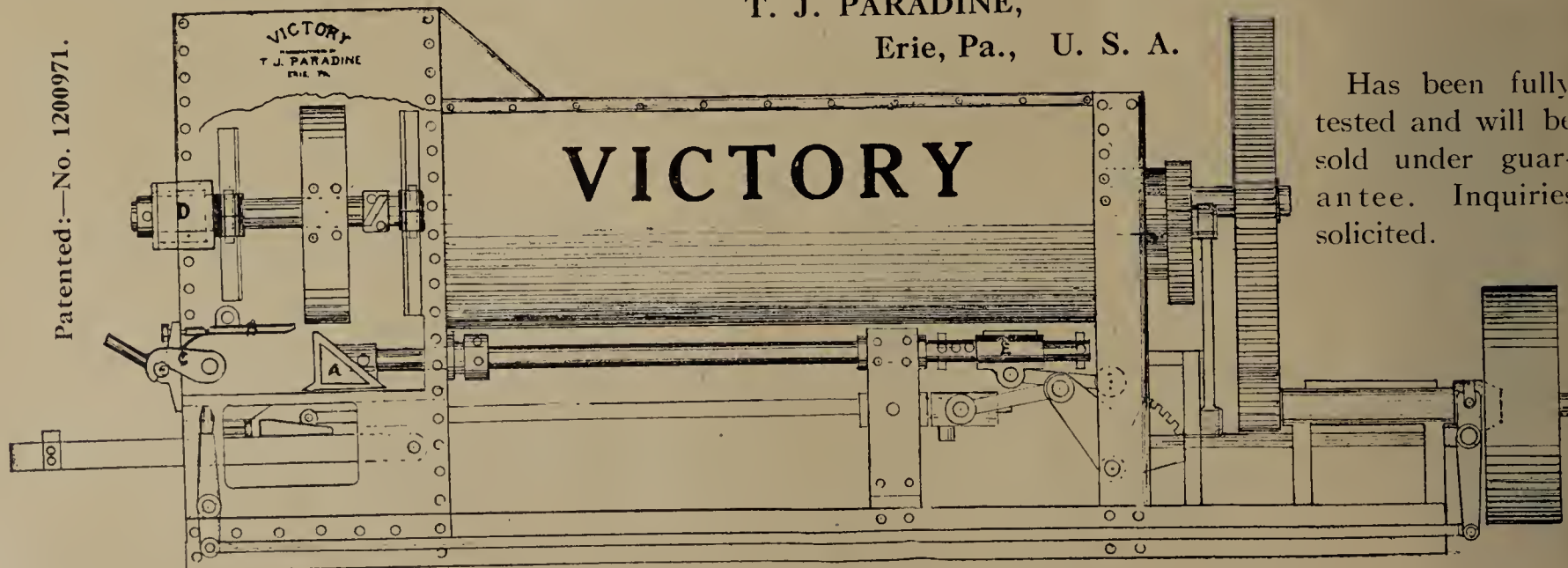
An interesting feature of this special report is in a review of the progress of the clay industry itself, that is the mining and marketing of clay independently for use in the clayworking industries. It is pointed out in this that while the miners of low grade clays are usually also the manufacturers, in the high grade clays the trend is toward separate and distinct industries in clay mining from those which burn the clay wares. The figures show that during the decade the volume of clay mined and marketed has increased 50 per cent. There was mined in 1920 3,116,212 tons of clay valued at \$11,614,288. This included kaolin, ball clay, slip clay, fire clay, stone ware clay, and miscellaneous clay products, with fire clay making up about three-fourths of the total. Among the states most conspicuous in the mining and marketing of clay are Pennsylvania, New York, and Missouri in the order named. Other states making a fairly good showing are Georgia, Ohio, Illinois, South Carolina and California, while a number of other states are making development which may prove interesting. In fact some clay is mined and sold in about forty states and the signs point toward considerable development in this branch of the industry in the next few years.

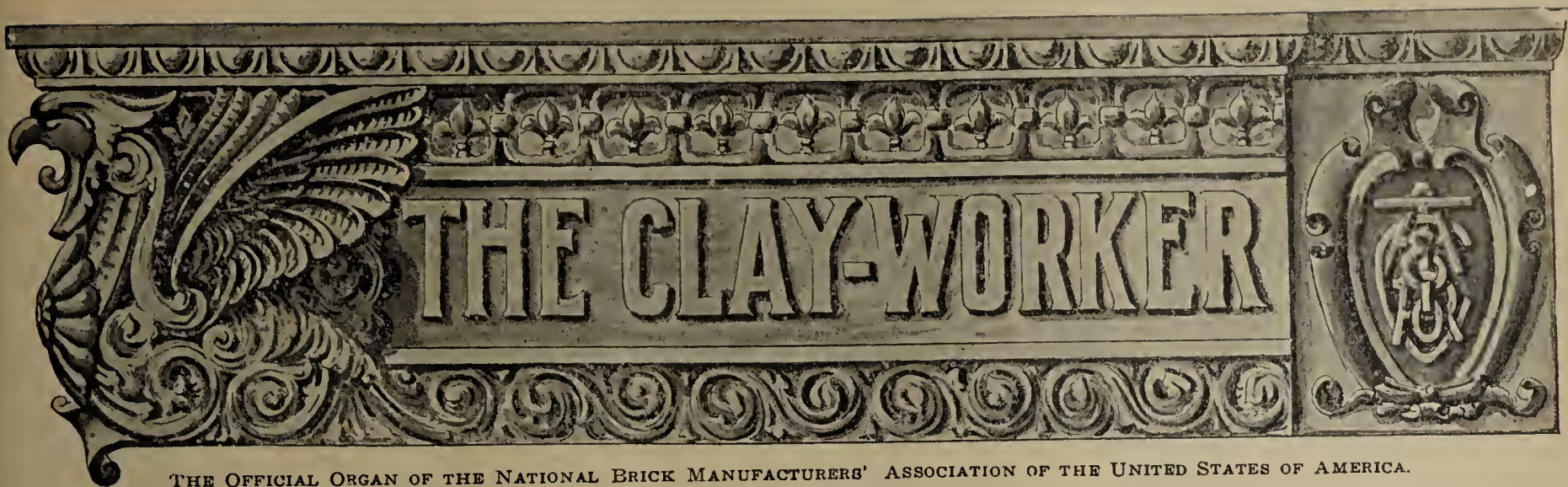
Is designed to correct the weak points in the old Machines. The body is made of $\frac{3}{8}$ " Boiler Plate, riveted and bolted as a steam boiler. It is mounted on 8" x 8" x $\frac{1}{2}$ " steel angles, which is all the foundation it requires.

The press is the main feature. It regulates the pressure automatically. Makes Brick stiff enough to handle. It is driven by one belt and requires 15 Horse Power to operate. Designed and built by

T. J. PARADINE,

Erie, Pa., U. S. A.





THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 78

INDIANAPOLIS, OCTOBER, 1922.

No. 4

BUILD WITH BRICK:-- The Home Builder Prefers Brick. The One Objection is the Cost of Construction. Will American Inventive Genius Develop a Method of Laying Brick Mechanically and so Insure the Universal Use of Brick? Someday it Will Be Done, in the Meantime How Can More Bricklayers Be Provided? ❁ ❁ ❁ ❁ ❁ ❁

THIS MOST striking slogan, given to the craft a decade or more ago by the Clay-Worker, was used to fine advantage by Mr. Frank Mann, the inventor of the Mann Patent Trowel, in an attractive display at the Indiana State Fair. We picture the exhibit which was viewed by thousands of visitors, mostly well-to-do farmers, who manifested a lively interest in the work of the demonstrator who at frequent intervals laid up sections of a brick flue or chimney using the Mann trowel and thus gave an ocular demonstration of the clever work that can be done with that tool. The speed and accuracy with which the work was done caused favorable comment by all who witnessed it.

Farmers, well-to-do farmers, when they build prefer to build permanent structures. That is their natural predilection. They want the first cost to be the only cost and the only building material they can use with an assurance of that achievement is brick or tile. Permanency and durability fit in well with the farmers' habits of thrift, he naturally prefers brick.

The older generation can remember that in the early days the pioneer farmers built their homes of brick, oftentimes making the brick themselves on the premises. Rural Indiana is dotted with substantial brick houses built in that manner. One of these pioneer Hoosier farmers commenting on this said, "Those good old days have gone forever. Brick and bricklayers have become so expensive and so scarce and

consequently brick buildings cost so much that we farmers have been obliged to forego our natural preference for brick, and build with frame."

Now the pendulum is swinging back and the cost of lumber and carpenter work makes frame buildings as expensive in first cost as buildings of brick. Everybody knows that the ultimate cost of brick buildings is much less than those of wood, it isn't the first cost, it's the upkeep that counts.

The thinking farmer knows that the first cost doesn't matter so much, it's the ultimate cost that counts in the long run. The painting alone makes the frame building more expensive in the course of a few years and there are other even more important features, such as the fire-proof quality of the brick home, that make it the most desirable material.

The trade slogan, "Build with Brick," appeals to the farmer because the brick building is safer, more comfortable in every way. It takes less

fuel to heat it in the winter time and it is cooler in the summer, so it is apparent that the pioneer farmers were wise in their day and generation when they built with brick, even though they did have to make and burn the brick themselves. There is no occasion for their doing this in this day and age. Good building brick can be obtained within a reasonable distance even in the rural districts. The one and chief hindrance is the lack of skilled bricklayers. The

BUILD WITH BRICK

THE EVERLASTING MATERIAL

MAKES THE STRUCTURE BEAUTIFUL.
NO PAINTING. NO COST FOR REPAIRS.
FIRE PROOF. TIME PROOF. WEATHER PROOF.
COOL IN SUMMER. WARM IN WINTER.

latter are found only in the cities and towns of considerable size.

In the olden days a carpenter was a bricklayer or a bricklayer was a carpenter as conditions might require, not so today. Now a bricklayer lays brick and does nothing else, if he is a union bricklayer. It is one of the rules of his trade that he cannot touch a saw or hammer. A union carpenter cannot touch a trowel, hence, as there are not enough bricklayers to meet the urgent demand for home building, the average home builder is well nigh compelled to build of frame, and this applies to the towns as well as to the rural districts.

An illuminating instance came to the writer's attention recently. A well-to-do manufacturer of clay machinery wanted to build a home for his son who was about to be married, naturally he wanted to build of brick. In his own town, a city of some six thousand people, there are two bricklayers, neither of them are brick contractors, they find enough to do to build the foundations, chimneys and porch piers for frame houses without taking contracts for brick structures, so they declined to make an estimate on the job. Disappointed but persistent, the manufacturer journeyed to a larger town some thirty miles distant where he found a brick contractor, submitted his plans and in due time received a bid which to his surprise and disgust amounted to nearly twice the cost of a frame house. The brick contractor was again consulted, he said the figures were a little high he knew but he had to take his men from one town to the other and with all the inconveniences incident to doing work away from home, he felt that the price quoted was the best he could offer, so much against his will, the manufacturer reluctantly built a frame house.

Probably many like instances could be cited by others similarly situated throughout the country. It is the lack of bricklayers that compels many who want to build with brick to accept the less desirable construction and build of frame.

Mr. Mann's demonstration was made for the purpose of letting the farmers who want to build with brick know that with the improved trowel and a Handy Andy workman, they can build their own homes, their barns and sheds and silos, of brick, just as they used to do. A skilled bricklayer is not paramount for construction work in rural sections. What has been done can be done again and the farmer who has the will can build permanently with indestructible brick by using the Mann trowel. This was well demonstrated by Mr. Mann. The brick garage pictured was built by one man who is shown in the picture in about six hours and the work was done not only quickly but well. The brick work was good enough for any ordinary domestic building.

The present situation, the lack of bricklayers, is due in no small degree to the restrictions of apprentices by the master bricklayers. This, it is thought, may be overcome by the introduction of schools for bricklayers and it has been announced schools for bricklayers were to be established in various cities throughout the country. At first glance this listens good but if they are all to follow a plan such as adopted in Cleveland in connection with the city schools there, there is little hope for any relief for a long time to come, for the plan proposed in the Buckeye metropolis is to establish a four-year course in the city schools and if we have got to wait four years for the production of skilled bricklayers, we are nursing a vain hope if we expect to get anywhere by that process. A much more feasible proposition is to put the Mann trowel in the hands of mechanics somewhat familiar with construction work. With a very little practice it will enable such workmen to build good substantial brick walls at a moderate cost.

Thinking to speed up brick work and so more easily meet

the competition of frame construction, it was suggested to the officials of the bricklayers union that the Mann trowel be adopted and the helper be permitted to spread the mortar, the bricklayer laying the brick and perfecting the pointing up and other details with his old trowel in the usual way, thus quickening the work and lessening the cost. But the proposition was turned down. The union officials saying, "we will not permit the helper to touch a trowel, the minute he does so he becomes a bricklayer and we won't countenance anything of that sort." This is another way of saying, "to hell with the ultimate consumer, let him take care of himself, just as we union men have to do." "The public be damned" idea prevails to no small extent in all industrial affairs but in ignoring the welfare of the ultimate consumer, the bricklayer may find that he is sawing the limb off between himself and the tree. By diverting building of frame, concrete and other materials, he may ultimately find himself out of a job. This would have been the case long ago but for the one unalterable fact that brick is the best building material. But for that fact the arbitrary unreasonable attitude of the bricklaying craft would have put an end to the industry ere this. The union officials say they are now favorable to the bricklayers' school idea. Is that because a four-year period lies between the youthful apprentice and his graduation as a bricklayer? It is a tough proposition but a little patience and perseverance may overcome the difficulties which now stand between a more common use of building brick because of the lack of skilled bricklayers. It is said that necessity is the mother of invention and the demand for brick homes and other domestic buildings may result in improved methods that may permit us to again see the rural landscape dotted with substantial brick homes, barns, silos, etc., a situation very desirable. Let us hope.

AN INNOVATION IN APPRENTICESHIP.

A bulletin of the Building Trades Employers Association of Cleveland has an interesting story by Otto Best who says:

"Past experience in vocational training has proven that apprentices manifest greater interest in a trade school when there are features employed to increase its attractiveness. It is the idea of the Apprentice Committee to appoint an Examining Board which, in conjunction with the Board of Education, will submit to the boys at stated intervals an examination in the theory and practice of bricklaying. If the apprentice passes this examination with a satisfactory mark he will receive a bonus in the form of increased wages or a reduction in the term of his apprenticeship. At the present time no definite conclusion has been reached as to which form will be used."

The committee passes on applications for apprenticeship studies, the qualities and progress and also makes a survey and takes into consideration the number of youngsters that the trade will absorb in a given community so as to maintain as near as possible the proper balance between supply and demand.

Efforts are made also to obtain complete co-operation of both employers and of local unions and to develop apprenticeship ideas on a modern and progressive basis.

BRICK ON FREE LIST.

As we understand the tariff bill, brick, cement and coal are all on the free list, with a provision for retaliation against countries which charge duties on the American product. This is as it should be and American brick and cement manufacturers are not likely to ask for anything else.

APPRENTICES AND TRADE LEARNING.

THERE IS A LOT of argument and mixed in with it an unnecessary amount of dissension on the subject of apprentices, trade schools and how a young man is to acquire the necessary training in any skilled calling to qualify him as a skilled worker.

There is argument back and forth between official publications of employers' organizations and other official publications of unions of employes about the apprentice question. One side claiming that the unions are inclined to limit and restrict the number and thus put stumbling blocks in the way of progress especially in building trades. Some of the union papers on the other hand find flaws in the quick and intensive methods devised in connection with vocational schools for training skilled workers, and so the argument goes on without limit and without that kind of real enlightenment which we need at the present time. There is too much

certain academic studies. We have on the one hand vocational training or manual training mixed in as a part of our schools. On the other there is a reaching out into industry and striving for a combination by means of which students can attend school so much and put in so much time at actual work under real industrial conditions and thus get a combination of schooling and training that will be good and will advance them more rapidly.

There is a third angle to this problem made up of introducing specific schooling and instructions as a part of industrial training along with the regular employment in industries of magnitude sufficient to make practical organized group effort of this kind. So we are really making some progress, and out of the various efforts and experiments we should get light and knowledge that will lead us to better things if we can just eliminate factional differences and that narrow selfishness which prevents a man seeing good in those things which he does not feel moved to advocate him-



A Neat Brick Garage Built in Six Hours with the Mann Patent Trowel and the Bricklayer Who Did the Job.

confusion and confuting argument and not enough effort apparent to point a clear and progressive way for the training of youngsters in whatever calling they may choose.

The average youngster of today hasn't the patient persistence of a generation or two ago. He does not like the idea of spending two or three years as an apprentice. Some say, too, that employers for the most part do not find it profitable to employ apprentices. The real answer here probably is that the employers do not find it profitable to employ an apprentice in the capacity and at the wages paid for the qualified skilled workman.

In most all trades and callings where a skilled man is required, there is usually also required the assistance of helpers. With the proper spirit of co-operation the skilled man can teach the helper the things he knows so that in the course of time the helper acquires real practical knowledge along with his experience that will qualify him without the long term of apprenticeship which used to be considered necessary.

There is a disposition to mingle with vocational training

self. In the training of youngsters as in the manufacturing itself progress is the order of the day and we should be able to shorten the time and increase the efficiency of our efforts by proper study and experiment and that is what we will get to eventually. And the sooner we stop bickering and show a more earnest effort all around for the general well being of humanity and the progress of industry the sooner we will attain a more satisfactory state of affairs in the training and qualifying of youngsters for skilled callings.

One of the most persistent advertisers in the history of success was Robinson Crusoe. He knew what he wanted—a ship—so he put an ad for one. He flung a shirt on a pole, at the top of his island. That, in the language of the sea, was plain to every seafaring man.

The circulation was small, there was no other medium, but Crusoe kept at it, despite the fact that he got no inquiries for a long time. He changed his copy, as one garment after another was frayed out, and in the end got what he wanted. —Co-operation.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Six—"Working Wet Limey Clays."

By W. D. Richardson.

ONCE A YEAR, at least, we have an inquiry from some one who wants to know how to treat a clay containing limestone pebbles. Such clays are quite common in the northern part of the United States, the limestone fragments having been transported, in the glacial age, by ice and water from limestone formations farther north. We can now refer such inquirers to the Report of the 36th Annual Convention of the N. B. M. A., since nowhere else in brickmaking literature can be found such a thorough, practical treatise on the subject as that by Mr. George M. Krick, in his paper before the Indianapolis convention.

The usefulness of such a paper should extend beyond the convention before which it was read and beyond the pages of the Clay-Worker, in which it was published, and I trust the bound official reports are printed in sufficient numbers that they can be purchased by future members of the N. B. M. A. and by others who may be interested in getting some special information contained in these reports. There is much valuable matter buried in these convention reports. It should be made more accessible by a proper index. Assuming that copies of these reports can be had of the Secretary, an index of these should be printed for distribution or sale to members and others. Doubtless there are those who would volunteer to prepare such an index, if action were taken for its publication. The volumes of the transactions of the American Ceramic Society are a valuable asset, as you may learn by asking the price. A client of ours last year paid \$8.00 for a volume of these transactions just to get a paper on burning brick, no better than many papers that can be found in the N. B. M. A. Reports. So, these Reports would be a valuable asset of the Association, with proper care in preparation of program and with a proper index of all.

A Bit of N. B. M. A. History.

The program of the Indianapolis convention was especially rich in its contributions to our literature and the papers should be available for future members and others at a moderate price. Mr. Krick's paper was of special interest to me, since my first experience in brick manufacture, in Minnesota, was with such a clay. We were making dry-press brick along the Mississippi river. This was probably when the surface clay, free from pebbles, was being worked at Decatur, since I find that Mr. H. Krick was a member of the second annual convention of the N. B. M. A. at Chicago, in 1887, where I read a paper upon the preparation of clay for dry pressed brick. In that paper no attempt was made to give any details of our process of removing the pebbles, only a part of which were limestone. The method was, for the most part, crude, but was correct in principle and could be profitably employed today. This was before rotary dryers came into use in the clay industries and our clay was dried in the sun and wind and then stored in sheds. Our aim was not to grind up the pebbles, but to remove them and that is what I would do today under similar conditions. This gave us a lot of trouble until our machinist, Mr. Pratt, of Anoka, made for us the "Chain Pulverizer." Pratt afterwards moved to Monticello, where for two summers I struggled with the stony clay. I do not believe that a more efficient machine for the purpose has ever been devised. I have just been looking over old volumes of the Clay-Worker to find a picture of this machine, which was patented and advertised for a short time. The

advertisement states. "The machine does not grind the clay but whips it to pieces with the chain beaters, leaving the stone whole and as free from clay as though cleaned with a wire brush." These chains were riveted to two special vertical shafts, geared together and running in opposite directions, spaced so that when the chains straightened out by centrifugal force those of one shaft would just clear those on the other. The clay was fed into center on top and in falling through the machine was whipped by these chains. The outside casing was of flat bar steel, set in grooves cast in top and bottom plates, forming a flexible shell on which the clay would not build. Around this we placed a canvas cover to prevent the dust from flying.

From this machine the clay was chuted into a rotary screen, from which the clean pebbles tailed out of the building to the ground below. The machine was efficient but the wear on the links of the chain, as then constructed, caused frequent repairs. Improvement could now be made on such a machine. It required small power to operate and by using another set of pulverizers and screens, for a second treatment of the screened material, the smallest pebbles could be removed. In some places, the gravel, separated from the clay would be saleable. At the Denison factory, Delaware, O., the gravel was washed, the clayey water being used for pugging, improving the output, and the sale of the gravel paying for the cost of washing.

Pulverizing Lime Stones in Clay.

Mr. Krick uses a pulverizer that breaks up or crushes the stones and then he aims to screen out all particles that are coarse enough to cause damage to the burnt ware from pitting and specking but on this point his practice is not quite clear. It probably could not be determined just what per cent of limestone there is in the clay, on an average. He states that he does not use any clay containing more than 5 per cent of limestone, though he says it varies and might be as high as 30 per cent, if not selected. He screens through wire cloth, one-twentieth by one-half-inch slots but how much of it is just fine enough to pass this screen and how much through a finer mesh screen, he does not state, yet undoubtedly much of it would pass through a 30 mesh and some of it much finer.

There are three factors to be considered in grinding limestone in clay:

1. The percentage of limestone in the clay.
2. The fineness of the grinding.
3. The temperature at which the ware is burned and the duration of the high fire.

These matters have been investigated by scientific men connected with the brick industry and it may be well to supplement this paper by giving a resume of some of these investigations.

Foreign Experiments.

Mr. E. Cramer, of the Tonindustrie Laboratory, Berlin, made some experiments along this line, from which he deduced an opinion that it was not necessary to grind the stone finer than one-twentieth of an inch in diameter. What kind of product he had in mind is not given, but presumably common brick, nor is it stated what per cent of limestone the clay contained.

Later, Mr. de Sharenggrad made a more systematic study

of the lime-pebbly clays of central Europe. He washed out the stones and then ground and then sieved them into particles 1-50th, 1-25th, 1-12th and 1-16th of an inch in diameter. Stone of each size were then mixed with the clean clay in the proportion of 2, 5 and 10 per cent, respectively, and bricks made from these different mixtures and burned. After the burnt brick had stood in his office a month, those containing 2 and 5 per cent of stone ground to 1-50 of an inch diameter still remained good, though the brick containing 10 per cent of stone of this fineness had begun to split in two weeks. Brick of all the other grades of fineness, containing more than 2 per cent of stone, were damaged more or less.

As de Sherengrad found it impractical to grind the stone as fine as 1-50th of an inch diameter, he then tried the effect of longer duration of the high fire. He had been stopping the firing as soon as the kiln had reached a definite temperature, but a microscopic examination showed that the stone remained free and uncombined with the clay. It was therefore sought to bring about a chemical combination by holding the high heat for a longer time.

After numerous trials de Sherengrad burned his clay, hold-

would be impractical and the method of removing the stones, instead of grinding them, should be employed. It is a question whether in any case the latter is not the safer and more practical way.

Limestone clays are quite common in central Europe and the practice, called by the Germans "tauchen," should be mentioned. They lower a car or barrow of brick right from the kiln into a tank of water. It seems that an excess of water and rapid slaking of the quick lime does not cause the expansion that slow slaking does. Sharengrad, in the experiments described above, found that the bricks that were dipped in water immediately after being taken from the kiln, "remained sound, even when the largest particles of lime were present."

BRICKMAKING IN THRACE.

WHEN GREEK MEETS GREEK, then comes the tug of war, but when Greek meets Turk, these modern times, the latter seems to have it pretty much his own way. Thrace, but little heard of heretofore, has lately



The Kiddies of Thrace and Their Daily Task of Sun-baked Brick.

ing the high heat for 48 hours, instead of 8 hours, with the result that the extra time the goods were exposed to the heat enabled a combination to take place between the lime and the clay and that brick fired under these conditions not only remains free from popping or pitting, but is actually stronger, the slight vitrification that has taken place binding the particles more closely together.

Experiments of Prof. Bleininger.

Mr. Bleininger also made similar experiments, mixing 10 and 20 per cent of high calcium limestone of different sizes of grain with a red burning plastic clay and burning to cones 08 and 06. His conclusion, as mentioned by Mr. Krick, was: "In order to assure the prevention of mechanical destruction and pitting of the burnt ware, the lime particles in the raw clay must be reduced in size finer than 40 mesh. If the appearance of small specks is undesirable, it would be necessary to grind the limestone finer than 60 mesh. The harder the clay is burnt, the coarser the lime particles may be."

In common wares, such as drain tile, hollow building tile and common brick, it may not be necessary to have entire freedom from small pits and lime specks. If it were, the grinding of the clay and screening through 40 to 60 mesh screen

been a headliner in the press of the world. The readers of The Clay-Worker will be particularly interested in the announcement that in that ancient section, brickmaking is still a primitive industry, at least so the accompanying photograph would indicate. The work seems to be done mostly by children. Work begins very early for children in the Near East and in Thrace they still toil like the ancient Isrealites at brickmaking, as will be seen in the incident illustrated. The kiddies have been making sun-baked brick, which are still used in building houses and walls of Thrace. Judging from the pictures the kiddies are not unhappy. They seem to be a sturdy and contented lot, apparently well fed and comfortably clad, such as may be found in the foreign sections of any of our own industrial centers. We are wondering if Mudania is also a brickmaking center.

Let us have a court of industrial relations, or else put some teeth in that law which created the railway wage board, for the idea of future railway strikes is intolerable.

It is labor cost in the building industry more than labor cost in brick plants that is adding so much to the cost of good brick building as to cause some hesitancy.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



FUEL CONDITIONS in this territory have greatly improved, and it is predicted that within the next thirty days the coal status will again reach normal. All of the brick plants near Washington are now well supplied with coal, and one of the largest yards has cancelled orders which it had already placed for a large quantity, having a good supply on hand.

Not only has the coal stringency practically passed, but all of the brickmakers hereabouts are well stocked up with orders, some having enough orders in hand to keep them busy well into midwinter and later.

West Bros. Brick Co. report good conditions a'l around. "We are well supplied with coal," said Mr. L. Perry West, of the firm, "and are cancelling orders for a large amount as we have enough stored to run us for a considerable time. Of course, we are paying an advanced price, and if this continues we shall probably be compelled to increase brick prices. As yet, however, we have not done so, our prices remaining at \$20 and \$21. We anticipate good business from now on, as building seems to have taken a new start since transportation conditions have improved. We have a good lot of orders in hand and are running about at capacity."

Mr. John Miller, of John Miller & Co., 911 H Street, says that his plant was hard hit by the fuel shortage, and was compelled to shut down for a time. "Now, however," he said, "we are pushing ahead with a fair supply of coal and more available, and enough orders booked to keep us busy for a considerable time. We have been compelled to increase prices on account of the higher coal costs, and are now quoting \$16, \$18 and \$20. For the next few months we look for capacity business, but it is hard to predict just what 1923 holds for the brick producers. With transportation conditions normal and building operations continuing to go ahead, it looks like a big year."

The National Brick Co., 1402 I Street, are running close to capacity with a lot of good-size orders on hand, and many more in prospect. The National kept going on a reduced scale during the coal shortage, but now is well supplied with fuel.

Virginia Brick Co., Colorado Building, reports conditions rapidly nearing normal, with fuel worries about over. This company is well supplied with orders and good trade is predicted for three or four months to come, with a busy 1923 in prospect.

The United Clay Products Co., Munsey Building, among the largest manufacturers and distributors of brick and other clay products in this section, is in the midst of one of their busiest seasons on face brick and hollow tile. The concern is looking forward to one of its busiest years in 1923. Many large orders are now in hand.

Building Operations Break Records in District of Columbia.

Washington's building operations reached the peak in the fiscal year which ended on June 30, when the sum spent for new building projects totaled \$36,197,059. Suburban building led the list with over \$23,000,000 of the amount. There was an increase of 2,000 new buildings over the preceding fiscal year, while the sum involved increased \$17,197,798. There were 2,470 brick houses erected, 91 of tile, 103 concrete and 846 frame in the past year. The number of permits issued for building operations of all kinds totaled 10,997. A comparison with previous years shows an increase in the value and vol-

ume of building operations, despite the high cost of materials and labor, of about 40 per cent.

Bureau of Standards to Further Investigate Refractories Specifications.

The United States Bureau of Standards announces that at the last meeting of the Advisory Committee on Specifications for Refractories it became evident that additional investigation would be necessary to determine what test requirements are most effective in drawing the line between satisfactory and unsatisfactory brick for furnace linings in stoker-fired boilers. As a result preparations are being made to conduct an extended series of tests, including a 72-hour reheating test at 1,450 degrees C. A prominent consulting engineer is co-operating with the Bureau in this work, and in addition to gathering information as to the suitability of different brands of brick is arranging to have a quantity of samples representing about twenty different brands of brick shipped to the Bureau by the manufacturers.

August Brick Sales Nearly Double Those for August, 1921.

According to the industrial division, Census Bureau, the brick production and sales in August, 1922, far exceeded those for the same month in 1921. Following are the figures:

	1921 August.	—1922— July	Aug.
Clay fire brick:			
Production thousands..	26,189	47,266	51,828
Shipments do.....	26,485	45,851	49,075
Stocks, end of month....do.....	142,308	158,236	162,876
New orders do.....	24,190	55,681	52,300
Unfilled orders do.....	27,334	67,557	74,399
Silica brick:			
Production do.....	3,836	11,332	9,666
Shipments do.....	3,752	12,533	11,687
Stocks, end of month....do.....	41,591	37,572	35,743

SCANDINAVIAN BRICK IMPOSSIBLE IN AMERICAN MARKETS.

Alfred T. Marks.

THAT UNITED STATES manufacturers of building brick need give themselves little uneasiness on account of the somewhat widely heralded importation of brick from the Scandinavian countries is very evident. While it is true that several experiments of this kind have been attempted, and equally certain that the ultimate purpose of those back of these enterprises engaged in the game as a sort of propaganda to force down brick prices in the United States—nevertheless the facts are that America cannot import brick from either Denmark, Sweden or Norway, or any other European country profitably or to such an extent as to affect our brick production here.

The chief reasons why our brick production and sale will not be affected by the attempts to import the European product are two: The considerable expense of transportation and the fact that brick produced abroad, especially in the northern European countries, is not standard in either size or composition.

These important facts were emphasized in an interview accorded the Washington representative of "The Clay-Worker" by Eric Engeborg, a prominent dealer in building materials and related lines in Copenhagen, Denmark, who spent several days of an American trip in the national capital early this month.

Asked about the possibility of any of the Scandinavian countries shipping building brick to the United States, Mr. Engeborg said:

"Of course, the brick can be shipped as long as transporta-

tion is available, and as your new tariff law lets it in free there is no hindrance there. But I am satisfied that under present producing conditions in Europe, and for various other reasons, brick produced there cannot compete successfully with American brick in your own markets unless your prices advance greatly above present figures.

"I happen to know of a recent instance where a shipload of brick was sent to New York from Copenhagen, and the cost per thousand set down in the United States exceeded \$12. This, you will understand, is the actual cost of manufacture and transportation, and allows for no profit to either the producer in Denmark or the wholesaler in the United States. With brick of similar or equal quality selling, as I understand, at \$15 to \$18 in New York and many other places in this country it will be seen that the foreign product stands very little show in your markets.

"Another reason which would operate against the use of our brick is that we do not make brick of the same dimensions as those produced in the United States, yours being considerably smaller. This, as you can readily see, would lead to all sorts of complications. Of course, it is quite pos-

brick than that we should make any serious attempt to capture your markets."

Mr. Engeborg will visit Pittsburgh structural iron mills and one or two of the Ohio brick plants on his trip west.

COMMON SENSE POLICY FOR A SMALL SCALE BRICK AND TILE PLANT.

A DAY SPENT with the clayworkers at Lawrence, Kansas, revealed the secret of success for a small brick plant with limited capital. A blue shale that will vitrify at a very low temperature—lower than anywhere else in the state—brought into existence the Lawrence Brick and Tile Company. The plant dates back to the days prior to the Civil War when hand molding was the only way. During the years it has changed hands many times and it is now operated by the Climax Corporation of New York.

Their present shale pit has a face of thirty-five feet. The shale lies between the second and upper Oread limestone. The overburden consists of about ninety per cent quartz.



General View of the Plant of the Lawrence, Kas., Brick & Tile Co.

sible to standardize sizes to the dimensions of your brick, but this would unfavorably effect our growing home demand which uses only the larger brick; nor would it be feasible, as I see it, to make an American-sized brick solely for export and the large size for the domestic market.

"A further reason why you need not fear a deluge of Scandinavian brick is that, at this time—and it will be so for a long period to come—we have no considerable surplus to export. Building in Denmark and the neighboring countries is fast increasing, with a consequent enlarged demand for brick. We are shipping some brick into Belgium and the devastated sections of northern France, but not a great amount.

"The only possibility I can see of European brick getting into the United States markets in sufficient quantity to seriously affect your producers would be where your manufacturing costs advance to probably double what they are today, our manufacturers make brick of the American standard size and produce a big surplus over the domestic demand—and I think I am safe in saying that none of these things is likely to happen.

"If I were to predict anything at all, it would be, looking at the question on all sides, that the United States brick producers are far more likely to invade our markets with their

This of course means caution or defective brick because the shrinkage of quartz is at a different ratio from that of shale. This pit has a ten-year supply. Nearby, in fact adjoining the present one, is another pit upon which the company has an option. Its supply is estimated for 100 years. The overburden of the latter is much less.

The excavation of the shale was at first done by the steam shovel but later the company found that hand labor was much cheaper. Dynamite is used to dislodge the shale then the men shovel it into an ordinary car with a capacity of 6,000 pounds. This is then hoisted to the tower in the usual way over an inclined trestle. In the tower the car automatically dumps its contents into a crusher where an American nine-foot dry pan crushes the large pieces of shale. During wet weather fragments of tile are put in to keep the openings clear. About 100 tons a day is the average amount crushed and of this but five per cent comes back for the second trip. When pulverized it passes through one-eighth of an inch apertures into a chute and is elevated to a screen made from twenty gauge piano wire.

From the screen room the shale goes directly to the pug-mill where it is mixed with water and the barium solution. The latter is mixed by using about a half-pound to the

gallon. The water coming into the pugmill is hot, the temperature being regulated to give right consistency. The quality of the shale determines the amount of liquids. When combined the mixture passes on to the No. 1 Giant Augur.

Making Wire Cut Brick.

The augur pushes the clay bar on to the cutting machine where six or seven cuts are made per minute averaging 108 bricks in that time. The machine they are now using is an old paving block affair converted to make face brick, therefore one brick out of every 19 is imperfect. From here the bricks, 500 to the car, are wheeled into the drying kiln tunnels, each tunnel holding 216 cars. Waste heat is used in the drying process, the air being supplied by the heat from the kilns. It is sucked from the latter by a huge fan driven by a motor and a Link Belt Silent Chain. The temperature runs from 150 to 200 degrees Fahrenheit. This is maintained from 24 to 48 hours as required.

After drying the burning of course begins. They have seven kilns each with a capacity of 150,000. The temperature runs around 1,800 or 1,900 degrees. The average time is usually about 137 hours; the minimum is 96; the maximum is 208. The registering is done by the Brown Electric Pyrometer. The heat is furnished by fuel oil. Eighty pounds



The Clay Pit of the Lawrence Brick and Tile Co.

of steam pressure and eighty pounds of oil pressure meet and ignite. This is not permitted to spread out as under the boilers. The cooling process averages from four to five days but conditions sometimes require seven to ten days.

The output in terms of plant speed is 60,000 bricks per day but the actual rate of production is 40,000. In addition to the hard surface brick they also manufacture tile. In this line they are doing a unique thing. They make a six-cell tile that is no heavier than a two-cell block. This they rug, thereby making it usable for exterior work. The tile clay here is unusually plastic.

Safety First in Plant Operation.

There are about thirty-five men employed working on the nine-hour plan. The ones handling the green bricks are paid on piece work. All of them are residents of Lawrence and regular workers. One aim of the management being to avoid drifters and to give fair, frank treatment. The plant is an old one and there are many makeshifts used but "safety-first" is the watchword. A supply of water is kept in different parts of the structure as a fire emergency. Various other safety devices are in evidence. Economy is here a necessity because the plant is once more being rescued from failure. The abundance and quality of the shale has always been the prime motive for its operation. The enforced idleness of the

plant in former years has been due to bad management along with a continued run through the war times in order to give their employees labor.

Success in future years is assured by the policy of the Climax people. Their policy is to make two articles only but make them perfect. They know that more than once in former times the business went bankrupt because the owners tried to make everything under the sun in the clay line. For that reason simplicity is their slogan. That is why they are now shipping out to different parts of the country enormous amounts of face brick and of tile. Both of excellent quality and good workmanship.

The burner is a man trained through practical experience. His per cent of loss in the kiln is far below the average. In other words Mr. Fellows knows his end of the game. Mr. C.



Looking Across the Top of the Dry Kilns.



Boiler House and Mill Shed.

G. Hesse, the manager, is an accountant by profession knowing, as he says, "the money side of the business." Nevertheless, he has the good sense and tact to choose men who actually know the working side and then he goes on about his own business. Out on the road the sales end is managed by the Coates Brothers, expert along that line.

And so it is by simplicity, economy, square dealing, good management and selling ability, the Climax Corporation is spelling success for the Lawrence Brick and Tile Company. It is putting it back on the map of busy, efficient clayworkers; it is lifting the debts and the creditors are smiling and all the time the builders of the world are calling for more.

Outside mechanical equipment will often be better off with a coat of paint before winter sets in and a liberal use of oil on bearing parts.

THE NEW ENGLAND SITUATION.

THE TOTALS for construction thus far have so eclipsed the records for last year as to make this year appear very busy. To summarize, when actual figures are compared, the gain is very close to double that of last year. The movement forward in this section has been steady. Rarely has a month rounded out but that the contemplated new work has shown a total running well into eight figures.

Some sections have shown increases that are very amazing, but there are other sections that have not shown up quite so well. This has been true of all sections, and what is true of other localities is also true in this. We have had our troubles with labor and the scarcity of materials. But despite these difficulties, we have managed to show results, and

comes imperative to make alterations. The new work and alterations, as shown in statistical reports, are only those which the owners felt were necessary to help production at that time.

This section is, in all probability, the same as others. Basic building materials are coming up to winter, with little or no reserve on hand to care for the estimated demands. To some the fall and winter demand will deplete stocks to such a point as to necessitate calling upon other centers. With these centers in the same trouble, there may be a slight momentary cessation of operations. So far there has been a loophole, and no doubt there will be another, and the crisis passed before we begin to know there is one.

The prices of the commodities and basic materials remain at approximately the same levels. Common brick remain at



Loading Car From Stock Yard.



Stock of Hollow Tile, Plant in Background.



Plant Spur Between Kilns and Stock Yard.



Head Burner, C. W. Fellows and Manager C. G. Hesse.

these compare very well with other sections that have reported large amounts only occasionally.

Upon survey, the manufacturers are fairly well off in many respects. In many instances it can be seen they are much better off than some from other parts of the country. They have had their difficulties in obtaining coal, to be sure. Some are burning wood yet, while others turned to their old standby when they began to feel the push due to lack of coal. Now that this much needed commodity is beginning to move, it will not be long before things will have regulated themselves to pre-strike days.

The statistics as of August 1st for the two-thirds point of the year show that things have been going on throughout this part of the country. Of the amounts that are being given out, almost fifty per cent goes to the credit of residential work, while the industrial plants show only ten per cent. It would seem, therefore, that the owners are contemplating making their present equipment do until such time as it be-

their former levels with little or no apparent barometric action visible. A quotation may show a slight stiffening in price occasionally. What shows a poor outlook is the upset condition of shipping and delivery schedules. The shortage of cars is a very prominent factor at present, as has also been the scarcity of fuel in the very recent past.

Face brick is keeping up its reputation by going neither up nor down. The fluctuation may appear one day, and be gone the next. The demand has been quite brisk and bids fair to remain a factor to be taken care of until late fall and early winter. Hollow tile shows some effect of the troubles of the makers. Where coal has been scarce, the sizes that could be fired easily were the ones sent out, when cars were to be had. Now cars are scarce and the situation has a tendency to tighten somewhat. Those having a stock, or one might call it a reserve, are not over anxious to let it go until they know how their source of supply looks.

THE CERAMIST'S CORNER

This is a department which appears in The Clay-Worker from time to time dealing with practical and technical matters of especial interest to the ceramist. This month we publish the current items on various matters pertaining particularly to the interests of manufacturers of the higher grade ceramic ware.

WHITE CLAY MINING IN SOUTH CAROLINA.

AN INTERESTING report on the white clay industry in the vicinity of Langley, S. C. has been furnished by W. M. Weigel to the U. S. Bureau of Mines and has recently been put out in bulletin form.

We are reminded by this report that the clays in this territory are sedimentary kaolins in the Middendorf and Hamburg series of the Cretaceous Age.

Deposits occur as lenses or restricted areas, lying practically horizontal at depths varying from a few feet up to perhaps 75 feet. Usually the area ranges around 10 or more acres and the beds vary in thickness from 12 to 25 feet. The prospecting to find the beds is done by either pit digging, drilling, or using the hydraulic jets, and enough of this is carried on to define the clay bed outline or extent after which operations usually take on the form of stripping. If it is shallow the stripping may be done by teams with scrapers but in the main it is mechanical excavators which are entering into the operations now and it is figured that it is practical to strip 3 feet of overburden for every foot of available clay. Thus for a 20-foot vein of clay it will be practical commercially to strip 60 feet of ordinary overburden. This is the greatest depth of stripping so far encountered and some of the stripping is only a few feet.

After the rough stripping is done the last few inches of cover is removed by hand and about half-inch of the top clay is scraped off with it to free the clay from sand and colored matter and to get it clean and in good shape for marketing without having to be washed or specifically refined in any manner other than drying and crushing.

The preparation for market consists essentially in drying, crushing and grinding the clay, and different operations follow different methods both in the process of handling and in drying and crushing, some drying in sheds, some through rotary dryers, some one way and some another. It is the same way in the matter of handling, some use barrows, some trucks, some conveyors, and one gathers from the report of three separate operations described in detail that there is a steady tendency toward artificial drying and mechanical handling so as to keep the operations on an efficient basis. The description of the plant of the South Carolina Clay Co., about two and one-half miles southeast of Langley, S. C., says:

At this mine the cars of clay from the pit are hauled by gasoline locomotive over a 100-ton V-bottom bin and dumped. The bottom of the bin has a slot about 12 inches wide running its full length, covered with removable boards. Under this slot is a chain scraper conveyor, the return flight of which passes over the top of the bin.

The conveyor delivers the lumps of clay to a crusher consisting of a steel cylinder about 18 inches in diameter by 20 inches face, with six $\frac{5}{8} \times 1\frac{1}{4}$ -inch steel bars riveted on the face. This machine rotates at 180 revolutions per minute in a wooden steel-lined box, the bars being about 1 inch from the end of the box. The clay lumps are thus shredded.

A scraper conveyor delivers this material to a second crusher which runs faster than the first. A small bucket elevator and a screw conveyor deliver the clay to a

5 by 25-foot Ruggles-Cole coal-fired indirect-heat dryer, running 5 to 6 revolutions per minute.

A chain-belt elevator delivers the dried clay to a 5-ton bin, whence it passes to a 4-roller Raymond high-side mill having a 7-foot air separator equipped with an inside cone to collect and return the coarse particles to the mill.

The fan that draws the clay from the Raymond mill delivers it through a cyclone collector to a 10-ton bin, from which it is bagged by a 2-bag Bates packer in paper bags holding 60 pounds of ground clay. The excess air from the system escapes through 2,000 square feet of filtering surface in muslin bags. The dust from the bags collects in a hopper beneath them, and is bagged by hand.

The plant has an hourly capacity of 3 tons of finished clay. The clay as it comes to the mill contains about 15 per cent moisture. Three tons of coal per 10 hours—for 30 tons of clay—are burned in the dryer. This quantity is equivalent to 1 pound of coal to 1.05 pounds of water evaporated. Obviously the clay is difficult to dry; an equal amount of water in granular material, such as concentrates of some metallic sulphides, evaporates much more easily.

Six men are required to operate the plant. The bagged clay is loaded on narrow gauge cars and hauled two miles by gasoline locomotive to the main line of the Southern Railway. For some customers the clay is not ground, the roller mill and bagger being by-passed, and the crushed dried clay bagged by hand in burlap bags.

Other operations described vary somewhat in detail but the scheme in each case is to carefully strip the clay then get it dried, reduced to powdered form and bagged ready for shipping.

The report states that in the district as a whole there is considerable reserve of clay yet untouched so the industry can be considered fairly stable. The clays are considered well adapted for paper stock, where they are largely used, and for pottery and chinaware without washing. The clays range 44 per cent and slightly higher in silica and about 39 to 40 in alumina, with one to two per cent of ferric oxide and titanite oxide and only a trace of magnesia.

A BULLETIN ON KILN INVESTIGATIONS.

There is now in hand the first bulletin report on the field work being done under the supervision of R. T. Stull by the laboratory car and crew which was illustrated and described in the Clay-Worker some time ago, the work of which is being supported by the American Face Brick Association, the National Paving Brick Manufacturers Association, the Common Brick Manufacturers Association, and the Hollow Building Tile Association. This car is an official part of the U. S. Bureau of Mines and has been visiting various commercial plants and conducting investigations into the burning of heavy clay products with the object in view of reducing the fuel consumption, shortening the time of burning, and improving the quality of the product.

The first bulletin report says that in several cases the results have shown the possibility of saving one third of the fuel and cutting down the burning time in the kiln an equal

amount, which of course means a worthwhile saving in cost. Continuing the report says:

"Tests have been completed on eight kilns, namely: 2 common brick, 2 paving brick, 2 face brick, and 2 hollow building tile kilns. The work consists of obtaining data on the performance of burning industrial kilns under normal factory practice. The data so obtained are charted, and after a careful study of the results, certain changes in the method of setting and firing the kilns are made as the results appear to warrant, and a second test is made. In nearly all instances, substantial savings in time and fuel have been made, from 1 to 50 per cent time in burning, and from 10 to 38 per cent in fuel. In nearly all cases the quality of the product was improved.

"In order to obtain fundamental data as to burning properties tests were run by the Bureau on the clays used at the several plants where the field investigations were being carried out. The following tests were run in a routine way on each clay previous to each burn: Fusion temperature; lag curve (time-temperature); rate of "watersmoking"; rate of oxidation penetration; vitrification range; sticking temperature.

"Some of the problems attacked by the Bureau of Mines are as follows: Cause and prevention of red core in brick; cause and effect of so-called "blue-smoke"; removal of sulphur fumes from kiln gases in order that they may be used in dryers; cause of slabbing or popping in clays high in siderite; cause of kiln glazing on shale brick (pavers) when certain coals are used; relation between porosity and rattler tests and effect of lamination on both; why some clays swell long before zero porosity is obtained; and cause of bloating of ceramic ware.

Considerable light has been thrown on the first four problems by work in connection with the oxidation of the incidental minerals found in clays."

THE MUELLER SLIPHOUSE.

The above is the title of a catalog of the Mueller Machine Company, Inc., Clay Machinery Specialists, Trenton, N. J., containing finely illustrated descriptive matter pertaining to this well known concern's equipment for the potters' slip department, including blungers, agitators, clay screen or lawn filter press pump and filter press. This catalog will prove interesting and valuable to any ceramists needing high grade equipment of this nature.

CLAY RESOURCES OF GEORGIA AND ALABAMA.

There are in hand two pamphlets gotten out by J. M. Mallory, General Industrial Agent of the Central of Georgia railway, Savannah, Ga. One gives an outline of the kaolin and China clay resources along this railway line through Georgia and Alabama, while the other is devoted to bauxite clay and refractory clay resources. The clay prospects are reported upon technically by T. Poole Maynard, Consulting Geologist who gives the location and classification of the different clays found along the railroad together with a charting by map which makes the reports both more interesting and more definite in understanding.

A BULLETIN ON COMPRESSED AIR.

The Engineering Experiment Station of the University of Illinois, at Urbana, Ill., has been conducting some investigations in the use of compressed air for power purposes and the results of these investigations have been published as Bulletin 130, copy of which may be had without charge by addressing the Engineering Experiment Station at Urbana.

U. S. BUREAU OF MINE REPORTS.

AMONG THE THINGS of interest to the clayworking industry being investigated and reported upon by the Bureau of Mines there is a brief on the survey and testing of kaolin deposits in the eastern states including Georgia, Florida, Pennsylvania, South Carolina, Maryland, Virginia, North Carolina and Mississippi. The different clays from Georgia, Florida, Pennsylvania, South Carolina and Maryland vary from extremely coarse to extremely fine clays. All the clays tested from Virginia, Delaware, North Carolina and Mississippi were coarse grained. In investigations to determine the possibilities of improving the color of American clays after firing, it was found that 73 of the 80 clays tested burned to a fair white color, after refining the same by elutriation. A microscopic examination of the clays showed that the North Carolina, Delaware and Maryland kaolins were similar to the English kaolin in that they are composed of coarse crystalline kaolinite particles; clays from New Jersey, South Carolina, Georgia, Mississippi, Virginia and Florida are composed largely of aggregates of fine grained kaolinite.

Oxidation of Incidental Minerals Found in Clays.

The purpose of an investigation being conducted by the Bureau of Mines at the ceramic experiment station, Columbus, Ohio, is to obtain fundamental data concerning the action of the incidental minerals found in clays during firing, and, later, to make application of the information so obtained to explain certain phenomena that occur with the clay body. It is hoped to throw light on the physical, chemical and thermal changes taking place in clay bodies between a temperature of 400 degrees and 800 degrees, the so-called oxidation period. The work is a part of the industrial kiln investigation conducted in co-operation with the four heavy clay products associations—Common Brick, Face Brick, Paving Brick and Hollow Building Tile Associations. Data has been obtained on the dissociation and oxidation of sulphides found in clays. The work, it is hoped, will afford information on the so-called "scum" developed on some red bricks. Data for time, temperature and atmosphere curves have been worked out in reference to the oxidation of the carbonaceous matter found in clays. Clays have been distilled and the products of distillation studied. Application of the data to a study of the so-called "bloating" of clay products is being made. This work has been conducted by G. A. Bole, physical chemist, F. G. Jackson, assistant chemist, and J. G. Phillips, junior ceramic chemist.

Behavior of Fire Brick in Malleable Iron Furnace Bungs.

Investigation of fire brick in malleable iron furnace bungs has been continued by the Bureau of Mines in order to translate laboratory results for users of clay refractories in malleable iron furnace practice. Different types of fire brick were found to stand 3 to 22 heats. The standard laboratory tests for fire brick did not show this difference, so a thorough study of the relation between the laboratory and service tests were made to assist the manufacturer in the utilization of fire clays for malleable iron furnace brick. The brick giving the heat service had a porosity between 1.9 and 2.3 per cent. Those brick showing the smallest spalling loss stand up best in practice.

Dolomite for Refractories.

If the lime in dolomite can be combined so as to render it nonslaking and at the same time hold up the refractoriness of the material, the abundant deposits of dolomite in the country would be rendered available for extensive use as a basic refractory, according to the United States Bureau of Mines. Briquettes containing 90 per cent dolomite and vary-

ing percentages of iron oxide and clay have been burned by the Bureau of Mines at the ceramic experiment station, Columbus, Ohio. Slaking time tests were run and the results plotted on a triaxial diagram. The slowest slaking mixture was selected for making into bricks which were burned to a high enough temperature to render the lime inactive. Bricks with a high fusion temperature and high specific gravity, great mechanical strength, and low porosity were the result. The work is being continued, using varying percentages of dolomite to determine the nonslaking areas over the entire field.

KENTUCKY BRICK AT THE STATE FAIR.

THE BRICK AND TILE people of Louisville and vicinity made a very good showing of their products at the Kentucky State Fair, which was held in the midweek of September, and incidentally there came to town among the visitors quite a number of dealers from out in the state who are distributing agents of brick. The showing probably proved well worth while to the trade out in the state as well as made a good showing for city visitors.

Brick easily overshadowed other building material in the state fair exhibits though there were some lumber people and some cement people and some displaying of miniature or model homes. It is an odd fact, too, that the greatest miniature home display was made by the Louisville Taxicab Co., which, in order to exploit its taxicab service, constructed a model suburban section of ideal homes and home surroundings with paved streets and roadways, on which were miniature yellow cabs.

Among the brick and tile exhibits the Whaley Brick Co. of Louisville had wall panels and samples making substantially the same showing as the previous year. In fact, the outline and scheme of showing in each case was seemingly in the main a holdover from last year.

The Southern Brick & Tile Co., in addition to a wide variety of showings in face brick, also had a demonstrating section of ideal wall and some drain tile. The face brick showing included not only the soft tone sandmolded product of the Southern Brick & Tile Co., but also texture and especially colored stock from the West Point Brick & Lumber Co. and from the Standard Brick Manufacturing Co. at Evansville.

The Coral Ridge Clay Products Co. had some splendid wall panel showings in face brick, an interesting feature of which was the demonstrations of different mortar colors. They had black, natural cement, then a special gray mortar which they feature with their face brick, and the wall sections laid with these furnished an interesting story in bonds and color effects. In addition to face brick they showed hollow building tile and a section of hollow tile wall veneered with face brick.

The P. Bannon Pipe Co. made an interesting showing of its assortment of clay products, which include sewer pipe as an important feature but also involves hollow building tile, flue linings, flue caps, and refractory grate and fireplace slabs.

COST ACCOUNTING PROGRESS.

A charting by the Fabricated Production Department of the Chamber of Commerce of the United States on the progress of uniform cost accounting indicates that among those in the clayworking industry the pottery division has made the most recent progress. Interest has been vital and thoroughly aroused especially among the manufacturers of sanitary pottery and they have not only gone the full way in

installing cost systems but are making provision for further improvement in cost systems. A fair share of work with them was accomplished in previous years but they seemingly have done a lot of work during the year 1921-22 as have also the makers of electrical pottery. Among the brick divisions proper the chart indicates that the face brick people through the American Face Brick Association had accomplished their cost accounting work prior to 1921 and are therefore first on the list in point of getting busy early at uniform cost accounting and achieving results. The paving brick people did some uniform cost accounting previous to 1921 but have been very active since. The chart shows that the refractory division of the brick industry has gotten busy during the past year and now is actively at work on the problems of uniform cost accounting.

SEEN IN NEW JERSEY.

THIS STATE is maintaining her place among her sisters with regard to constructional activities. The same pressures as are felt in other sections are also felt throughout this locality. The principal activities are mostly confined to habitational work with every effort being made to close the work under way before the real cold weather sets in. Barring any unlooked for set-back, or a new cloud coming across the horizon, these efforts will not be in vain.

The greatest handicap that can be seen at present is the matter of car-shortage. This has had a very decided effect upon the schedules as laid out by the manufacturers, and has caused some little concern. The difficulty that has been experienced in obtaining raw materials has had a big influence upon matters as a whole. Shipments are a little better at present, but there is a lot of room for improvement on all sides.

Many manufacturers are content for the present to let business come their way, having no real desire to obtain big business until some, or most, of the contracts taken in the past have been sufficiently unloaded to warrant an attempt to get more work. The contracts they are anxious to get off their hands are those taken when the market prices were lower than at present. There is logic in this, as can be plainly seen.

The business being offered at present is in quite sizeable lots; while there is a great deal being accepted, the basis for much of this class of business is quoted at market price at time of delivery. One can see this is no business stimulant, but has a tendency quite the opposite. There is speculation as to prices for the coming year.

Brick prices have had a slight tendency upward during the past fortnight, or a little longer. When the crisis came in the coal shortage, most anything that could or would burn was used. The consequence was an inferior class of brick. These were unloaded on the market at the usual price, and caused a slight lowering in price levels. Badly as the market needed supplies, it would not take this material burned with inferior fuels. Some dealers, in order to clear themselves, offered them at, or near, the price of second-hand brick.

Prices in general remain the same—there is but slight alteration, and this is seen only in the inferior burned brick, and not in the standard burns. Face brick is at the former levels. The scarcity of cars may have a slight tendency to cause an upward movement, but in the main, the quotations remain at a steady and firm level. Hollow tile is at its old levels, except in places where it is a scarce article.

It has been reported that the Sneyd Enameled Brick Co., Trenton, N. J., is maintaining its regular output and keeping its regular force busy. It is the intention of this company to make a feature of its enameled brick during the coming months.

BURTON.

ORIGIN OF BRICK.

Article 6

SOME of the earliest American patents were taken out in 1792-1793-1800-1802-1806-1807. These records containing these specifications of the inventions were unfortunately burned in 1863. Prior to June of that year one hundred and twenty-two patents for Brick and Tile Machines had been granted in the United States. On December 9th, 1856, a patent was issued for a machine for pressing hollow building brick and building tile.

In the manufacture of hollow ware and brick the methods are similar; the raw material required are of much the same character, they are sometimes made at the same factory. At some plants the production of one type may predominate, the other being simply as a side line for the purpose of filling occasional orders.

The earliest record we have of hollow ware is in New Jersey as early as 1875. The production of hollow ware was



The Author of "Origin of Brick," A. W. Beecher, Indianapolis.

bound to increase as it formed an important part of the fireproofing buildings, and the many disastrous conflagrations, in recent years have served to emphasize its value. The call for hollow block has extended over the entire country, and appears to be a great favorite for fireproofing. Some hollow ware is made by adding sawdust to the clay to make a porous fireproofing. Hollow ware was made in Indiana in 1885 and gradually worked its way to the western states. At the present time New Jersey, Ohio, Indiana, Illinois, Iowa and Pennsylvania are the more important producers of hollow ware, while Ohio, New Jersey, Indiana and Iowa are the leading producers.

Hollow tile are made for the purpose of warming, ventilating and removing moisture from walls. For warmth, as it is well known, that an imprisoned body of air is a poor conductor for heat or cold.

We, as Americans, make great claims for our burnt clay products because of usefulness and beauty. It is economical, easily handled and transported; impervious to heat, cold and moisture, and its entire long history indicates, exceedingly

durable. Besides the burnt clay can lay claim to many distinctions. It has descended to the lowest depths to carry heavy foundations, as well as being displayed in the brightest places showing its wonderful colors. It has taken pride in high towers and beautiful columns. It has borne patiently the tramp of millions of human feet, together with light and most heavy traffic. It is used in the king's and rich man's mansions as well as in the poor man's humble home.

Burnt clay is the oldest known building material, with permanence the world has today, being used centuries before Christ.

Today owing to the advanced technical methods and power machinery, America has no equal in the quality and quantity and artistic variety of the burnt clay products. In soundness and durability, in delicate shades of colors, from the brightest to the darkest, in surface finish, rough, smooth, glazed and enameled.

American manufacturers of burnt clay products lead the world and the architectural results secured during the past ten to fifteen years indicates that not only the structural, but also the artistic possibilities of burnt clay will open up a brilliant future for the producers of burnt clay in this country.

Assured of the future from the experience of our past and knowing the methods employed by others, why cannot the manufacturers of burnt clay unite, discuss, and talk over the obstacles and difficulties that confront us in our open meetings and not be afraid of one another, nor afraid one would conceive an idea that would reduce his manufacturing cost a few cents per ton. Only by such meeting and discussions can the manufacturing cost be reduced, and by reducing the cost of manufacture, burnt clay products will always stay in the lead, and be the first thought of building material where the construction of a large or small building is being contemplated. The greatest advancement that can be had in the burnt clay industry today is the mutual exchange of methods and ideas.

A MONUMENT TO BUSINESS STATISTICS.

THERE IS BEING established a sort of monument to business statistics in Babson Institute Park at Wellesley Hills, Massachusetts. A special pamphlet issued by Cole & Smith, of Wellesley Hills, Massachusetts, gives a splendid pictorial story of the history of the town and of the vision of Mr. Babson which is now being realized. From this pamphlet we learn that—

"The plans provide for making Babson Institute Park the center of all work devoted to studying the future of industry and commerce. What the International Institute of Agriculture at Rome is to agriculture, the Babson Institute will be to business. The great auditorium, seating 1,800 people, is already being constructed in the park. This will serve for conventions of the leading trade and other national associations, of which there are now about 1,500. The plan is to have the larger of these associations have their annual conventions here once in five years. The auditorium will be within one-half hour's ride from the leading hotels of Boston and yet removed from the noise, dirt, and the distractions of the city."

The hope is expressed that the park will ultimately become a gigantic conference ground for the most progressive powers that control production and direct distribution of important items of commerce. There will be kept within its buildings, maps, record charts and up-to-date statistics of the world's industrial and commercial developments and opportunities, from which both the young and old can study the fundamentals of business.



BURNING A DOWN DRAFT KILN.

By Ellis Lovejoy

A DOWN draft kiln operation has four distinct stages,—water-smoking, oxidation, heating up, and driving the heat to the bottom, or heat soaking. Fire flashing is a fifth stage in the burning.

The ware from the dryer is never fully dry. There remains a fraction of a per cent. up to three or more per cent. of moisture and two to three per cent. of free water in such form that it cannot be removed by dryer temperatures.

Wares are often set before they are apparently dry, but even though they are seemingly dry, they contain water approximating five per cent, which must be removed in the kiln operation. The removal of this water content is the water-smoking stage in the burning, and the rate of its removal depends upon the behavior of the ware under such drying conditions and upon the efficiency of the kiln construction.

Slabbing of sewer pipe and large drain tile starts in the water-smoking; steaming with its resultant more or less rotten ware and subsequent discoloration, is a water-smoking trouble.

With some wares the fires may be advanced as rapidly as it is possible to build them up, and in other wares, especially dry pressed products, the kiln temperatures must be held very low for a period of five or more days, and in some instances up to thirty days, to safely remove the moisture. The rate of water-smoking must be determined for each ware, and the fires manipulated to attain the desired results. The usual custom is to build a small fire in the ash pit of each furnace, preferably of wood, coke, smokeless coal, or gas, but soft coals are often used. The objection to soft coal is the large volume of smoke which soots the damp ware and often the draft throughout the burn is choked by the sooted draft spaces. The furnace doors or mouths should be left open and as much draft maintained as possible. Unfortunately where the draft is by a stack we have very weak draft during the water-smoking stage in consequence of the stack being cold.

A kiln with a single stack is objectional, and in building a battery of kilns it is better to have one stack for two, three, or four kilns, but with an independent flue for each kiln. In this way we get the benefit of conducted heat from the combustion gases of the burning kilns, but in any event such a stack does not cool to the extent of a single stack, and we get the advantage of this heat in starting the water-smoking. If the situation is such that single stacks are unavoidable, they should be built with small furnaces at the base to heat up the stack and thus give us a good draft through the kiln in the early stages of the water-smoking.

A better plan would be to have a fan connection for the start of the kiln burning.

Fig. 199 shows the heat curves for two kilns, both burning bricks, and as it happens both clays stand a lot of abuse in water-smoking and oxidation. These curves are shown in the solid line and the dotted line. Practically complete removal of the moisture is attained at a temperature around 400 deg. Fah. to 450 deg. In the kiln shown by the solid line the water-smoking was finished in 16 hours and the dotted line kiln was ready for oxidation in 24 hours.

If one has a pyrometer, and every kiln should be equipped with such an instrument, and the burner has determined the safe rate advance of the heat in the top of the kiln, he can safely control the fires to get satisfactory results, but if he has no such guide, he must feel his way by observation of the volume of steam coming from the top of the stack and by means of an iron rod thrust into the kiln at different levels, noting the condensation on the rod. If the moisture driven from the ware is not removed from the kiln, but instead condenses and soaks into the ware in the bottom of the kiln, the result will be a lot of damaged ware in the bottom, and we have seen many burns in which it was evident the water-smoking had been advanced too rapidly in that the kiln floor, kiln flues, and stack, did not amply provide for the removal of the steam. Where such conditions exist the water-smoking must be correspondingly slower to prevent steaming the bottom ware.

The dash and dot curve in Fig. 199 illustrates slower water-smoking in which we have indicated 68 hours for this stage in the process and for some wares this would be rapid work.

In the other extreme, one operation—solid bricks set high and close—the burning was completed in 72 hours, but few clays will stand such rapid work. The kiln in this instance had the advantage of fan draft in the water-smoking and throughout the burn, and the clay stood a lot of abuse in water-smoking, besides requiring no oxidation, and also it had such a long burning range that it was not necessary to follow the usual procedure in working the heat to the bottom but instead the fires were kept under full head until the bricks in the bottom of the kiln were hard.

The usual burning periods are three to five days for hollow ware, five to nine days for stiff mud bricks, and eight to twelve days for dry pressed bricks.

In general practice the fires are built up to full fire by the time the water-smoke is off, and with full fire begins the oxidation. The oxidation consists in burning out the carbon in the clay and roasting out the sulphur, otherwise the product will be black cored and in the finishing stages the product will be bloated. The kiln is under full fire and with all the draft it can get, but the fires are kept open to take in as much excess air as possible. If the furnaces are of

the grateless type we do not close the firing mouths with coal as in the later stages of the burning, or if the furnaces are provided with doors, the latter are left partly open. The firing should be light and frequent, keeping in mind that we wish to advance the heat slowly and to admit as much excess air as may be taken in. It is the hot air that burns out the carbon and sulphur in the clay. We could carry the heat up to 800 degrees, more or less, and hold it until oxidation was complete, but it is better to keep the heat advanced slowly to the end of the oxidation and then jump as quickly as possible to the final stage of the burning.

The "blue smoke" from the stack, following, the water-smoke, is the visual evidence of the oxidation, and the end is determined by trial pieces taken from the kiln and noting whether the black core has fully disappeared. In one operation we noticed that after the black core has disappeared, there remained a saffron colored core which had not previously been considered. Extending the oxidation period 24 hours until the yellow core was dissipated, resulted in an

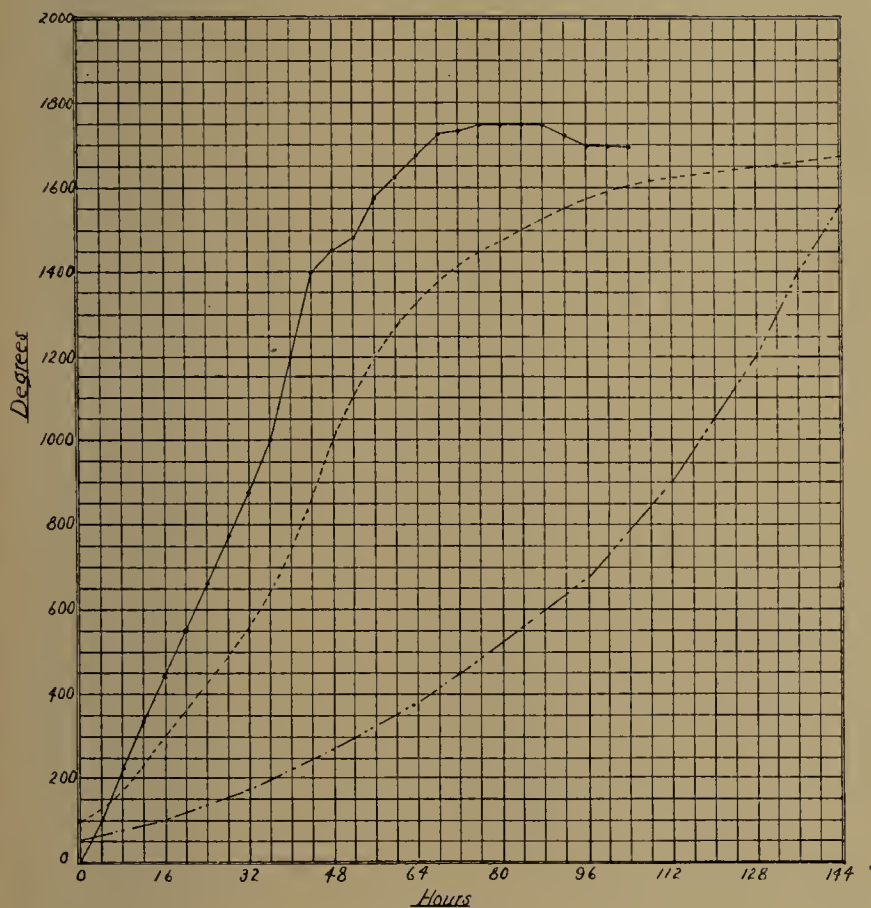


Figure 199.

improvement of five or more points in the rattler test in this paving brick product.

It is therefore not always safe to assume that oxidation is complete with the disappearance of the black core.

Oxidation takes place rapidly at a low red heat and in general the heat should not be allowed to get much above 1200 degrees until after the black core is fully out. Carbon particularly should be driven out at low temperatures because at higher temperatures there is a greater tendency to cracking of the gases and the deposition of carbon instead of its removal, and at high temperatures regardless of the quantity of excess air, carbon in the clay cannot be burned out.

Sulphur may be removed at higher temperatures but it must be out before vitrification begins. In one factory using a shale high in carbon and sulphur it was the practice to hold the temperature around 1200 degrees until the carbon was out and with it a lot of the sulphur, and this was indicated by the color of the smoke from the stack.

With the disappearance of the blue smoke, the temperature was advanced to 1,400 degrees, which resulted in a large volume of blue smoke, and this temperature was held until

the smoke was off, when the temperatures were further advanced to 1600 degrees and again held till the blue smoke was off.

The combined water in the clay begins to come off rapidly around 800 degrees but it does not require any change in the burning operation. Following the removal of the combined water, the ware begins to shrink, if it has any shrinkage, and the progress of the burn in many factories, especially those not equipped with pyrometers, is determined by the rate of the settle of the mass of ware. The guides in burning, besides the pyrometer, are the water-smoke, the blue smoke, the black and yellow cores, the settle, and trial pieces.

When oxidation is complete the fires should be closed at the furnace mouths and the heat may be advanced to the finishing stage as rapidly as possible.

This is the final heating up and it is the heavy firing period during the burning. The fires should be kept clean and in the best possible condition to get a maximum value out of the fuel.

When the finishing temperature is attained, or nearly so, on top we begin the process of working the heat to the bottom. The dampers are lowered to check the draft and thus we increase the pressure in the kiln, or more properly equalize the pressure and under this equal pressure the heat drifts to all parts of the kiln. The heat should be held at the finishing temperature, or practically so, throughout this final period, and this can be done by firing lighter, and oftener, if necessary. The furnace mouths, if the furnaces are the grateless or inclined grate type, should be lightly closed with coal, permitting the bed to burn down quickly to a small opening over the fuel bed.

A single shovelful, or two at most, suffices for each fire and it is seldom necessary to lessen the intervals of firing, in fact we may often increase the interval.

If it is a new operation one must work slowly through all the stages of the burning. It is better to take ten or more days in the early burns than to discourage the investors in the factory with bad burns. The curve to be followed is along the line of the dash and dot curve shown in Fig. 199, and one may go even slower than this depending upon the exhibits of the burn previously mentioned.

If the first burn is successful throughout, one may begin to shorten the periods, one at a time. A day more or less may be clipped from the water-smoking and repeated until the bottom ware shows some effect of steaming. This is beyond the limit and the period must be increased until no steaming is apparent. The next step is to shorten the oxidation period in the same manner until some bloated ware shows that the oxidation has been too fast. The dash and dot curve shows relatively slow oxidation. The heating up following the oxidation is usually simply a matter of getting the most out of the fuel, and the final temperature requires careful handling until satisfactory trials are obtained from the bottom of the kiln.

Fire flashing usually starts toward the end of the finishing heat and merely consists in working with dampers lowered in a greater degree and keeping the fires fully closed all the time. It is often designated as the "Smoking" stage because during it the volume of smoke is greatly increased, but it is more properly a reduction stage and smoke is not essential but unavoidable. The great danger is that we may advance the temperature beyond that which the ware will safely stand.

In consequence of this danger, we must, with many clays, work with an excess reducing condition, first to get the reducing condition which produces the flash, and second to

get it in such degree that the flame temperature and thereby the temperature in the kiln is not increased.

In the water-smoking and oxidation stages we are working with low temperatures and large air excess; in the heating we endeavor to get as nearly perfect combustion as possible to get a maximum heat value out of the fuel; in the soaking period we work with high temperatures, slow draft, and open fires and the excess air keeps the temperature from running too high; in the flashing we used closed fires, slow draft and insufficient air which prevents excessive temperature. If, in the flashing, we changed the soaking period firing back to the heating up firing except retaining the slow draft, we would rapidly advance the temperature which few wares would stand. Instead we go beyond the heating up firing and so damper the furnaces with coal to the extent that the combustion is far below perfect conditions and the flame temperatures are lower and thus we can control the kiln temperatures, but in doing so we get a lot of smoke we do not need.

The flashing period varies from 12 to 24 hours, depending upon the clay and the degree of flash desired.

NOTICE—This article is copyrighted, all rights reserved, as will be the subsequent articles on **COLORATION, DIS-COLORATION** and **OTHER BURNING EFFECTS** to appear in the November and December issues of *The Clay-Worker*. These articles will appear together with other additions and some revisions, in the second edition of *Burning Clay Wares*, now on the press.

SOME COAL FIGURES.

So much is said and written about the coal industry that about the only figures which excite attention in connection with it now are the price figures at which coal is offered to the ultimate consumer. However, there is a matter of interest in the final statistical report on coal production in 1921 from the U. S. Geological Survey.

The final figures show that the total of bituminous produced during the year 1921 was 415,920,000 tons valued at \$1,199,000,000 or \$2.89 per ton at the mines.

There is nothing remarkable in this production but it is a remarkable fact that contrary to what might have been expected the number of employes engaged in the coal mining industry increased during the year 24,000 making the total employed 633,754. This increase it is said is confined to the tonnage worker and did not consist in day men. There was no increase in the number of day men. As a result of this increase the average time worked in the bituminous mines during the year was 149 days, which means that the coal miners are working practically just half time and are insisting upon having a living wage rate based upon half time employment.

The average production per man per day increased slightly in 1921 from four tons to 4.20 tons. There was also a noticeable increase in the average productivity in machine mine work ranging 20 to 30 per cent above that where coal is under cut by hand and shot from the solid. The proportion of coal machine mined was 65.6 per cent in 1921 against 59.8 per cent in 1920, and shows a steady increase in the use of mechanical devices in this work.

The figures as a whole prove conclusively enough that about a third of the men employed in the coal industry should find employment somewhere else, then we would have a chance to get coal at reasonable prices and yet the men and the owners have ample opportunity to make good wages and nice profits.

It might be urged that we could use the extra miners this

winter to catch up. But here we are confronted with a car shortage that limits production and the whole situation is one which proves decidedly aggravating to the average coal consumer and shakes his confidence in both the intelligence and integrity of those shaping the destiny of the coal mining business.

BRICK NOW BEING MADE IN PALESTINE.

Vice-Counsel Cobb, stationed in Jerusalem, Palestine, reports to the Department of State that the Palestine Silicate Company, Ltd., of Jaffa, with a capital of £E75,000 (of which £E43,000 is paid up) and property 23 acres in extent, has a brick factory on the sands north of Tel-Aviv covering an area of 2,560 square meters. These bricks are made of a proportional mixture of sand and slaked lime and have a breaking strain of from 110 to 125 kilos per square centimeter. The maximum output thus far is 1,000,000 bricks per month, which can be increased to 1,250,000 bricks per month by working double shifts. Prices ex-factory range from 375 to 420 Turkish piasters (\$16.50 to \$18.48) per M, according to the quantity ordered. On account of the serious housing situation in Palestine, the railroad administration has made special concessions in its carrying charges for these silicate bricks. The full report, describing factory processes, is available to interested parties on application to the Eastern European and Levantine Division or through the district or co-operative offices of the Bureau of Foreign and Domestic Commerce, referring to exhibit No. 65646. ALTHOMAR.

ARKANSAS TRADE NEWS.

ROAD BUILDING, paving, water and sewer work and the construction of building requiring brick are still occupying a large place in the activities of the construction field in the state now.

Brick and tile men had appropriate exhibits at the Arkansas State Fair held in Little Rock, Ark., October 9-15.

At a Fall Harvest Festival staged at Pine Bluff, Ark., the first part of October, the Pine Bluff Brick Company had a booth built of brick, which was in personal charge of Garland Brewster of the firm.

The Chamber of Commerce at Magnolia, Ark., recently stated that a first-class brick and pipe plant is badly needed there. Near Magnolia there are large deposits of all kinds of clay.

J. H. Guest of the Guest Engineering Company, Pine Bluff, Ark., recently visited St. Louis to select eighteen cars of tile to be used in the construction of Sewer District No. 20 of that city. A total of seven miles of tile will be laid in that district.

Mellard & Ross have recently opened a brick factory about one mile east of Fordyce, Ark. The firm will operate on a small scale for the present. They had manufactured about 30,000 brick the latter part of September and were to make about 100,000 more.

Maurice Chamberlain, Malvern, Ark., and Webb Hardwick, also of the same city, are interested in a brick-making machine which Mr. Hardwick has invented. They recently visited Little Rock on business in connection with the invention. It is said that the new product will soon be placed on the market.

Reynolds Brothers of Little Rock, Ark., brick makers, have been at McRae, Ark., looking over a location for a brick manufacturing plant for that place. They stated that the clay there is ideal for making brick and that the supply is almost unlimited. They were to try to form a stock company to build a plant to cost about \$14,000. R. S. W.

MODERN ENGLISH ARCHITECTURE.

THERE IS a graphic and interesting reminder of the awakened interest in color schemes on the part of architects and builders in England, by the receipt from The British Clayworker of an elaborately illustrated pamphlet supplement on Brighter Building Materials.

In the opening paragraphs of this interesting story of the Awakening to Color Schemes in England we read that:

"For some years past the principal men connected with the clayworking industries have noted a steady increase in the demand by architects for brighter building materials. True, at first, this demand, in character, was rather sporadic, but it persisted; and again and again it was found that it had become articulate in the ordinary daily newspapers, and, incidentally, in the minds of the housebuilding fraternity.

"A few weeks ago, thanks to an agitation in the daily Press, the question of brightening buildings in London and some of the big provincial cities gained quite suddenly unexpected attention and prominence. The problem was debated in public, by district councils, corporations, and various artistic bodies, and by various types of active publicists, till once again the subject overflowed into pages of most of the organs associated with the building and cognate trades. On the top of this came what is known as the "R. I. B. A. colour competition," whereby, in a gift of timely character, a sum of 200 pounds was placed in the hands of the President of the R. I. B. A. by an anonymous donor for the purpose of instituting a competition for a business building facing on an ordinary London street in which "colour" (of a permanent nature) would be the dominant feature.

"This competition is still open to members of the architectural profession, but it is no longer a matter of secrecy that it has already attracted considerable attention, and has directly and indirectly stimulated a large number of enquiries amongst makers of terra-cotta, glazed tiles, and similar wares. At the same time, it is equally clear that this competition is only a tiny fraction of a movement in favor of the general employment of brighter building materials all over the kingdom. Architects quite unassociated with the competition are pushing their investigations in the same line, in response to this popular outcry for colour to relieve the sombre effect of our nominally grey atmospheres, and it is scarcely too much to assert that at this moment brighter building materials form a consideration of profound importance to architects who are keeping well abreast of the times, and are keenly responsive to present-day needs."

The interest in this case and in England generally seems to center right now specifically on the matter of color in glazed terra cotta and glazed brick and tile and it points plainly to a rise in favor and a wider use of terra cotta and glazed and enameled clay products in architecture. Preference seems to be given glazed surfaces because they will hold their color permanently in the English climate against the rapages of time.

In the course of the review of the awakening and the development of color interest it is pointed out that in earlier days architects demanded uniformity of color and manufacturers had to produce it. Then it is pointed out that there has been a remarkable change of feeling toward what is termed accidents of the kiln. These instead of being regarded as culls are now being sought after. Also it is pointed that even in America, the home of mechanical accuracy, there has been displayed an interest for years in texture and color, going so far that what were accidents of the kiln are sought to be reproduced by design.

The big point of interest through it all is the evidence of

an awakening in England to the advantages and the brightening influences of color variety and of having a color scheme that is permanent.

It might be said that this will serve to revive interest in colors here in our own country both in face brick and in enamel brick, tile and terra cotta, but as a matter of fact we have been on a keen quest for colors during the past decade or more and there is no let up. The interest is keener today than it has ever been before in getting distinctive and novel colors and color combinations. This is more noticeably apparent in face brick work but we can find evidence of it in glazed work, too, and all around us the interest in color is keen enough and has reached the point where it has also developed a lively tendency toward inquiry on the part of the building public as well as on the part of architects who design buildings, continuously seeking for new effects.

The awakening to color is one of the good signs of the times and the fact that we have some remarkable evidence of this same awakening in England should act as a stimulant to the clayworking industry in this country.

THE OHIO STATE BRICK PLANT.

There has been an active resumption of work at the state brick plant near Junction City, O., during the past two weeks, and reports this week showed that 146 prisoners from the State Penitentiary were working there. More cars are being made available and the shipment of paving brick to several big jobs is going forward regularly. Recent improvements made at the plant have enabled the welfare department to materially increase the output, which is being sold much faster than it can be delivered because of the shortage of freight cars.

STRIKE SETTLED BY EVERHARD CO.

A strike of employes in the brick plant of the Everhard Company, Massillon, Ohio, which was of ten days duration, has been settled and operations have been resumed, it is announced by company officials. A liberal advance in wages was given the men, it was stated. The Corinthian Texture face brick manufactured at the plant of the Everhard Company has been selected by the school board and architects of Syracuse, N. Y., for the large Eastwood school building to be erected in Syracuse, it was announced this week by company officials. About 150,000 brick will be shipped to that city.

VITREOUS CHINA COMPANY PLANS LARGER PLANT.

The Alliance Vitreous China Company, Alliance, Ohio, has decided to increase the size and capacity of their plant, and will make it a three-story building, erecting additional kilns.

This work will be completed prior to April 1, 1923. The plant will also be enlarged and the working force more than doubled.

The company will increase its capital stock and contemplates building another plant for the making of the same class of ware near plant No. 1.

The preliminaries for the second plant are well under way and will be a great improvement over the present plant. None of the stock in the company which is to be increased will be offered for sale upon the market.

When the two plants are in operation they will employ about 400 skilled clayworkers and decorators of the highest class obtainable, who will draw good wages.

PACIFIC COAST NEWS.

THE CALIFORNIA COMPLETE HOMES Exposition, of Oakland, now being held, is one of the products of the "Own Your Own Home" campaign of the Oakland realty board. It consists of ten new homes of different types of architecture, completely furnished, with lawns and shrubbery set. The buildings skirt a beautiful natural grove in the Lakeshore Highlands region in a most charming residential park. One of these buildings is the Dickey Mastertile building. It is constructed throughout of mastertile, faced with dark red ruffled brick, whose rough surface against a background of hill and dark green trees presents a blended and harmonious effect. The raised window flower bed, the steps, all follow the style of the old English cottage. The strongest impression is that of lasting durability. And this appearance is not misleading, as the tile is made with a resistance pressure of 1,415 lbs. to the square inch. And with this its weight is but 56 lbs. to the cubic foot.

An Imposing Demonstration of Building Tile.

As capacity crowds are attending the exposition, the California Brick Company, making the Mastertile, have constructed on a lot across the way five wall sections, demonstrating the use of Mastertile. One shows the wall with a surface of mottled and brown brick, with an ornamental row having a white vitrified surface. Another section shows a mottled and gray terra cotta surface. The third presents a plain smooth terra cotta. A fourth is simply plastered. The fifth shows the tile variously shaped for the formation of window frames, etc.

Refacing Frame Houses.

Paint may preserve a house for awhile, but some of the San Francisco builders have decided that brick will preserve it much longer; so in a number of instances old frame structures, solid and substantially built, have been given a new and long lease of life by means of a brick veneer. And not only does this give a lease of life, but gives to the place an appearance and value-look that it never had before. One instance specially is that of a large three-story deep house of stucco on frame. The stucco had become so badly cracked and broken that it leaked at every joint. The owner decided to fix it right. So the stucco was torn off, the frame sheathed in paper, and a face brick veneer built around it. It is now greatly increased in value, and one of the fine show houses of the neighborhood.

Dr. Davis, of Gladding and McBean, gives an interesting review of the general situation on the coast. The Gladding-McBean Company is one of the pioneer firms of San Francisco; and their trade has extended from Salt Lake City on the east and from Vancouver, British Columbia on the north, to San Diego on the south. Mr. Davis calls attention to the very notable development of the clay industry in the last several years throughout the whole west; and especially to the advance and perfection achieved in the production of hollow tile and terra cotta. Our trade has for long years been developing in the Hawaiian Islands, and is now greater than ever. The Gladding-McBean people have even recently shipped to Australia the terra cotta for a 14-story office building; and also for four large buildings in Japan.

Nevertheless, thinks Mr. Davis, we cannot flatter ourselves with the hope of a large oriental trade in clay products. They are heavy and bulky to transport; and these countries have abundance of material right at home to develop. This has not been developed because the demand has not yet required large scale production. And even so, not being accustomed to large scale production, they may be a little slow

in its development. In Japan today, they indeed produce brick and terra cotta; but in small yards and by hand processes that would make it perfectly impossible to supply the quick demands of a large job, according to American methods of construction. So while large corporations, and companies requiring special construction, have to look to us to supply what they cannot get close at hand, such trade is possible. But the ingenuity of the Jap will soon see the possibilities of better development in that line, and a few tall buildings will start the progressive Australian along the same line.

Peter McBean Passes.

Peter McGill McBean, the founder of the Gladding-McBean Brick and Tile Company, 78 years of age, died suddenly yesterday at the Fairmount Hotel, where he has been living for the past fourteen years. He was having trouble with his heart, but his physicians thought him improving so well that they had permitted him to take auto rides during the previous week. Mr. McBean was a native of Canada, and brought his family to San Francisco in 1875. The family immediately took their place among the leaders of the business, civic and social life of the community. At the time of his death, Mr.



A Corner of the Gladding-McBean Exhibit.

McBean was a member of the Pacific Union Club and the Burlingame Club. His son, Atholl McBean, is now president of the San Francisco Chamber of Commerce. There are also left to mourn his loss, a widow and a daughter, Mrs. Henry Kiersted. There are also left to mourn his loss, a very wide circle of business and social friends, who have long appreciated his business qualities and public spirit. The funeral was held from the home of the son, Atholl McBean, 3742 Washington street.

The accompanying illustrations show the interesting exhibits of crockery made by the Gladding-McBean Company at the California Industries Exposition.

LECTURES ON CLAY INDUSTRIES.

Brick, tile and associated clay product industries will be one of the subjects covered in a series of lectures on the Geology of Commerce and Industry which has recently been announced by the New York University. The purpose of the course is to acquaint students with the fundamental facts underlying the country's mineral and raw material situation. The character and source of supply, the methods and cost of preparing raw materials for market and their relation to other lines of business will be treated.

IMPORTATION OF BRICK.

A Strange Case at the Port of New York.

ANOTHER INSTANCE of the importation of brick has come to our attention which is rather peculiar; so strange, in fact, that there is some question as to whether they were really imported, or whether they are domestic brick camouflaging under the guise of foreign brick. Two years ago an importation of merchandise was made from Germany by a New York broker. The importation consisted of a number of cases of more or less valuable material. The cases as received were placed in a warehouse where they have remained since that time. Recently on removing the cases from the warehouse, they were found to contain a quantity of brick instead of the material invoiced. Now the question is whether the brick were substituted at port of shipment and, therefore, are foreign brick, or whether the substitution was made after the receipt of the brick in this



Artists of Gladding-McBean Modeling Department at Complete Homes Exposition.

country and consequently are domestic brick. The question is puzzling the broker and the warehouse people who have asked The Clay-Worker to help them determine whether the brick are of foreign or domestic manufacture, a question which may or may not be easy to determine after inspecting the brick.

LEXINGTON BRICK CO. INSTALLS OIL BURNING SYSTEM.

One of the latest additions to Lexington's growing list of manufacturing establishments is the Lexington Brick Manufacturing Company, recently incorporated by George B. Carey, Ben Myers and James E. McFarland, and now operating continuously at the old Lexington brick yard just outside the city limits on the Liberty pike. It employs forty people and has a capacity of 40,000 brick a day. The company, incorporated for \$50,000, purchased the property consisting of a

modern brick plant and fifty-seven acres of land from the First and City National Bank.

The plant has just finished burning its first kiln of 350,000 bricks. Brick experts who have examined the products have said it is the best brick seen in Lexington for several years.

The recent coal strike required that oil burning equipment for the boilers and kilns be installed in order to prevent any possible coal shortage, and these, modernly equipped, are now in full operation.

George B. Carey, president of the company, said it was the intention of the company to operate continuously in producing a high grade brick.

ONLY FORTY YEARS.

L. W. Penfield Remembered by Associates.—"1882-1922" Brings Forth Gift From Organization Members.

ON A RECENT FRIDAY when Mr. L. W. Penfield, vice-president and local manager of the Hadfield-Penfield Steel Company, returned to the Willoughby offices after several days' absence at Bucyrus, he found a neat little package on his desk enclosing a beautiful emerald and diamond stick pin and with a letter from his associates containing expressions of affection and appreciation and reminding him that he had completed a term of service to his company and to the community of forty years' duration.

Mr. Penfield immediately called the members of the organization together and thanked them for these expressions of friendship, stating that the fleeting years had never left any impression as to their number as they sped by, and he thought this may have been due in a great measure to the fact that he had always been surrounded by business associates that he loved and respected and on whose co-operation and assistance he could freely rely.

HARRY S. RENKERT'S ESTATE.

The will of Harry S. Renkert, deceased president of the Metropolitan Paving Brick Company, was filed in the office of the probate judge here recently. In the application the value of the estate is estimated at approximately \$500,000. Among one of the bequests is one of \$5,000 for charities to be selected by the executors. The entire estate including the Renkert building on Market avenue here, is held in trust until 1935, with income during the trusteeship payable to Mrs. Renkert. At the termination of the trust the entire estate is to be distributed among Mrs. Renkert and the three children.

TILES AND TILE WORK PUT ON EXHIBITION.

An interesting and instructive exhibition of tiles and tile work was opened to the public Wednesday, October 11, at the rooms of the Building Materials Exhibit in the Leiter building, 15 East Van Buren street, Chicago, Ill. The exhibition is being given under the auspices of the Associated Tile Manufacturers and will be open to the public two weeks.

The tiles shown constitute a comprehensive display of colors, sizes, patterns, glazes and finishes as produced in this branch of the ceramic art. It has been especially assembled to show the wide variety of materials available to the home owner of today, and will afford most helpful suggestions for the appropriate use of tilework.

During the exhibition there are scheduled special meetings of architects, tile contractors, tile setters, home builders and others interested. A private view of the exhibit for the members of the Illinois Chapter, American Institute of Architects, and the Illinois Society of Architects, and their guests was held on the evening of October 10.

THE TRADE QUIZ BOX.

Many readers of The Clay-Worker are wont to ask the editor for information on various matters pertaining to the brick and tile business. Usually such questions are answered by letter on the theory that the party asking the question is the only one particularly concerned, but many times the queries are of a general character and cover points in the trade in which the general reader may be interested, so we have inaugurated a Trade Quiz Box. Under this head, questions and answers will be given and any reader who can give further particulars in response to any particular query, or desires information on any phase of the business, is invited to make use of this department.

KILNS CHOKE UP WITH SOOT.

QUESTION: My kilns choke up with soot. What is the remedy? I am burning in rectangular up-draft kilns, furnaces built for coal on outside of kiln walls. I water-smoke with coke and after using 50 tons of gas coke, my kilns sometimes choke up with soot. I am using Western Kentucky coal. What is the remedy?

Answer: Many factories have more or less trouble in water-smoking brick in up-draft kilns in consequence of sooting and thus choking the draft, especially where the work is carried out with bituminous coal. We have known a number of yards that kept cast iron guns to shoot the soot. The gun was loaded to the limit, stuck into the kiln and fired.

The explosions loosen the soot and it is carried out of the kiln by the draft. Coke if burned to give a clear hot fire will water-smoke without sooting and the way to get such a hot fire is to loosely lay up a box of bricks on the furnace grate bars and after getting the coke nicely under fire, the box should be kept full of coke to get the deep fuel bed required for this fuel. Fifty tons of coke should be almost enough fuel to complete a burn of 200,000 brick and it is almost inconceivable that after using such an amount of coke, the kiln should soot when put on soft coal. Unless the kilns are very large, or there is something abnormally wrong, the brick should have a good red heat by the time fifty tons of coke have been used.

It may be that the kiln bottoms are wet and constantly drawing more water; that the brick are not properly dried before being placed in the kiln unless the product is dry pressed; that the setting may be too close, not only in the arches, but throughout the kiln; that the platting which should be double with the under course spaced and the upper course tight, is not sufficiently opened for the water-smoking. Every other brick in the top platting should be taken out for the water-smoking and replaced for the burning.

CAREY P. ELLIS.

A TREATISE ON OIL BURNING.

Perhaps actuated partly by conditions in the coal trade and the interest this has centered on the problem of fuel, the Texas Company, 17 Battery Place, New York City, which issues a monthly publication called Lubrication, has devoted an entire issue to modern oil burning.

First there is description of oil itself, then an illustrated description of devices used in the burning of oil as fuel for different purposes including that of power plants both stationary and marine and also for burning in the domestic furnaces of the home and industrial purposes. There follows

a description of tanks, pumps, heaters, pipings, fittings and all the other necessary equipment called into service.

Perhaps the point of greatest interest to the average clay-worker is in the claims made for advantages in fuel oil as compared to solid fuels and gases.

First among these claims is the absence of ash, practically smokeless combustion, and a reduction of labor cost in firing from 60 to 75 per cent. More distinct advantages are shown for marine service and on railroads than elsewhere but it is claimed that practically all the advantages of the marine services also hold in the stationary boiler plant.

The claim is made that fuel oil can be efficiently fired with only about 15 to 20 per cent of excess air therefore fires can be more easily controlled, there is less variation in furnace temperature and practically a smokeless combustion. In comparison with gas the advantages claimed for fuel oil are more strictly of a combustion nature.

The admission is made that for industrial purposes as compared with gas fuel, producer gas, etc., fuel oil offers few advantages except as to the fire hazard element and less storage space.

The publication in question should be of particular interest to those who are so located that they can obtain fuel oil on a competitive basis with coal.

SUBSTITUTING CLAY FOR IRON PIPE.

In some press bulletin briefs of some feature items in the Industrial Digest there is a brief story about substituting clay pipe in the place of cast iron pipe for drainage and sewage purposes as a result of experiments by the Carnegie Institute of Technology. Practically the only difficulty with clay pipe in competition with the metal pipe for ground pipe and sewerage drainage is in the joints. And it is said that four important points have been established by experiments as follows:

"(1) The joining of the pipe can be effectively accomplished by the use of a proper bituminous compound; (2) the joints made in this manner will withstand any pressure that the pipe itself will stand; (3) a pipe line, joined in this manner, can be thrown out of alignment without causing leakage at the joints; (4) leaks due to poor workmanship can be repaired easily and quickly."

As a matter of fact it is well enough known that some restrictions against clay sewer pipe in favor of cast iron pipe in plumbing and household drainage are uncalled for. Where the pipe goes under the ground and reasonable care is exercised in cementing the joints the clay pipe makes in some respects a more satisfactory household drainage system than metal because it will not corrode or rust and it is there for all time. It is well, however, that we are having some research and experiments that will bring out jointing methods which are beyond question because the more positive and satisfactory we can make the joints in clay sewer pipes the better are the chances for widening the field of uses. It should be practical to replace many of the upright standards in cast iron pipe for drainage with good clay sewer pipe with the improved jointing methods and thus help reduce the cost of building as well as furnish a piping easier to handle and that has more desirable and lasting qualities than metal.

The Roanoke Brick Company of Roanoke, Va., which was recently incorporated with a capital of \$100,000, has purchased the plant and equipment of the Roanoke Brick and Tile Corporation and plans extensive improvements on the plant. The factory will have a daily output of 20,000 of all grades of shale face brick.

Written for THE CLAY-WORKER.

NEWS FROM DIXIE LAND.



THE OPENING of the autumn season in the South looks more bright, especially in construction lines. The late summer months witnessed considerable difficulty in getting materials, due to railroad matters. On many of the branch lines cars are scarce now, but with open weather conditions everything points to unequalled building activity throughout the fall and winter months, much work at Memphis now under way, by reason of its magnitude will be under way all of the coming year. Other large brick and tile jobs started in the spring are being brought to a successful completion. On practically every down town street in Memphis scaffolds appear and buildings are going up, but most of this superstructure work in the down town section, merely means remodeling of old structures that have stood for a century more or less. In the residential sections and a few blocks further out the work is mostly new. The remodeling, however, is of a comprehensive character and the most modern materials, in brick, tile, terra cotta, roofing and fire-proofing enter into the work.

The old Orgill hardware building at Monroe and S. Front, facing the river, has been razed and the twelve story Shrine office building of the Al Chymia Temple will start there in three or four weeks. Much brick, stone, tile and marble, terra cotta and fire-proofing will figure in this temple and office building. The site is unquestionably one of the finest in the South facing the great Mississippi River just opposite the artistic Cossitt Library and a half square from the Custom House. Hanker and Cairns, Jones and Furbringer are the architects. Bids for the work are now being received.

It is announced that the fourteen-story hotel at Main and Adams will start this autumn. Plans by Jones and Furbringer, of Memphis, Barnett, Haynes and Barnett of St. Louis. It will cost around \$1,000,000 and have large frontage both on Main and Adams.

The Fischer Lime and Cement Co., on Walnut Street, Memphis, are completing the addition to their warehouse, that has been in use some time. The offices, dining room for employes, brick display rooms and other modern features will be on the upper floors of the new addition. The warehouse covers practically a block along the southern tracks between Linden and Pontotoc. The firm is very active in brick, fire-proofing, clay products, sewer pipe and other materials, with branch at Little Rock, Ark., sand and crushed stone interests at Greenville, Miss., and Williford, Ark.

John A. Denie's Sons Company, for the last sixty years at 82 South Front Street, have moved to their elegant new home at 373 Adams Avenue, along the Southern tracks. The building is of hollow tile and stonecote, the front decorated with ornamental stonecote casting and the interior trimmed in moulding plaster of unique design. A section of the building is reserved for display rooms. The Denie Company has always been one of the largest material firms in Memphis, active in lime and brick through their subsidiary companies. Lewis Moss, the president, reports fall trade prospects very good in this section. Among large contracts they are filling at present is the material on the Catholic Club mentioned above. They were among the first distributors of Portland cement in Memphis and their showings in sewer pipe, fire brick, terra cotta, and fire-proof materials are extensive.

The Southern Brick Supply Company, at 620 Madison Ave., is a recent entry in the Memphis trade. L. S. King is manager. Samples of face and fancy brick are shown in the floor displays and several lines of material for the retail trade.

Mr. McDowell, of the Memphis office of the B. Mifflin Hood

Brick Company, third floor of the Madison Ave. Building, reports business good, but deliveries poor last month. Their manufacturing plants in East Tennessee at the foot of Walden's Ridge, near Chattanooga, at Melville, Tenn., and plants in Georgia are active making roofing tile, hollow tile, brick and various burnt clay products. They have recently issued a large and beautifully illustrated catalogue prolific in illustrations of jobs they have equipped in great cities North and South.

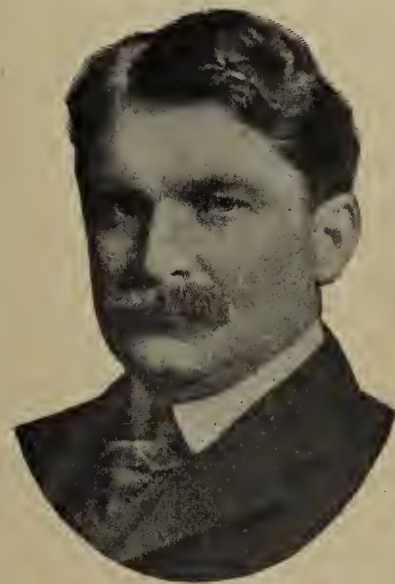
The Memphis Brick Supply Company, Goodwyn Institute, Memphis, J. J. Bishop, manager, is showing a wide and beautiful range of fancy brick on their floors and are supplying numerous apartment houses and public structures. They furnished some of the brick used in the Tri-State Fair buildings and are also furnishing brick on numerous churches and schools in the Tri-States.

—DIXIE.

MASSACHUSETTS TECH. ELECTS DR. STRATTON PRESIDENT.

DR. SAMUEL WESLEY STRATTON will assume the presidency of the Massachusetts Institute of Technology, the first of the year.

For twenty-one years he has been Director of the Federal Bureau of Standards at Washington and was instrumental in



Dr. S. W. Stratton, Washington, D. C.

building it up from a small office of weights and measures, employing only three or four men, to a bureau occupying a dozen buildings and employing a staff of more than 900 employes.

Dr. Stratton was born at Litchfield, Ill., in 1861 and graduated from the University of Illinois in 1884, where he later became professor of Physics and Electrical Engineering. From 1892 to 1901 he was with the physics department of the University of Chicago.

In the World War, under Dr. Stratton's direction the Bureau of Standards produced a supply of optical glass for this country, obviating further dependence on Germany.

In the war with Spain he served as Lieutenant in the Navy. In the World War he was a member of the Interdepartmental Board of the Council of National Defense and of the National Advisory Committee for Aeronautics.

He is eminently known in the ceramic industry and his splendid work in research has been most helpful in placing the silicate industries on a much higher plane.

The Clay Industries, while regretting his leaving the Bureau of Standards, where he has ever been an untiring friend, congratulates Massachusetts Technological Institute in gaining a leader of great ability and a man whom the students will love and honor.

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN BRICK AND BUILDING NEWS.



THE HORIZON HAS CLEARED for Milwaukee and Wisconsin manufacturers and jobbers of clay products with the recent settlement of the coal and railroad craftsmen strikes, the harvesting of a bumper small grain and fruit crops, and the general stimulation of all state industries. Unfilled orders in the files of local brick manufacturers have been increasing as the fall builders make their inroads on the present stocks. Report that brick is a drug on the market in other localities has been received with surprise by Milwaukee manufacturers and jobbers who find that their biggest difficulty is locating brick and transporting it, rather than searching for an outlet for the product.

It is believed that Wisconsin manufacturers and jobbers had a larger trade to satisfy than the brick manufacturers of other cities and they were not in a position to get ahead of it by abnormal production. Hence everything proceeded in a normal course of action, bricks were manufactured all during the building boom and the keen consuming demand prevented any surplus being piled up.

The coal question had been the bogey of local manufacturers for some time but it later developed that Milwaukee, a large distributing center on Lake Michigan, had unusually large stocks of coal and with few coal consuming industries in the city, the brick manufacturers were not compelled to suspend operations. Now that coal mining has been resumed generally the situation is considered more hopefully.

Transportation is the greatest concern of Milwaukee and Wisconsin jobbers and manufacturers. Both divisions are seeking cars to transport brick and other clay products to contractors who wish to complete jobs before the winter storms prevent operations. Wisconsin railroads have all reached agreements with their employes and all roads are employing full forces. An effort is being made to clear up the large stocks of small grain and fruit shipments that are seasonal. Farmers are storing grain in many cases which assists greatly in alleviating the transportation problem. Many fall projects are now being started in the agricultural districts and brick shipments must be made quickly in order to complete the construction work. The jobber and manufacturer have their troubles pacifying their trade by securing cars as quickly as possible. The problem is daily growing less intricate and as the weeks progress the normal trade action is gradually resumed.

A Shortage of Cement Slows Up Street Improvements.

A check in the steady flow of brick to paving contractors of Wisconsin has been caused by a cement shortage. It was declared this week in the Milwaukee city hall that there were not fifty bags of cement in the city available for street and alley paving contractors. Improvements all over the city were being held up by this scarcity. The same condition with the same effect holds true of the state highway paving contractors. The arrival of a cargo of cement by lake next week is expected to relieve somewhat the local scarcity in Mil-

waukee. The Garden Homes corporation, a community home building company, contracted early in the season for 10,000 barrels of cement and no trouble whatever has been experienced in the deliveries, although the price is now far above the 55 cents a bag, after the return of the bag, which the corporation is paying under its contract. Paving contractors working on Wisconsin highways throughout the state are suspending operations awaiting the delivery of cement. Several of the contractors in Washington county have abandoned all paving projects for the season. The cement shortage is reflected in the clay products market as sales of brick to paving contractors have taken a slump.

Milwaukee and Wisconsin building booms however will bring up the total volume of brick consumption to commanding heights over last year's figures. Buildings with a total frontage of twelve and one-half miles have been erected in Milwaukee this year, according to William D. Harper, inspector of buildings. This is more building pro rata than has been done in Chicago this year. Figures just announced show that fifty-one miles of buildings have been erected there since January 1, Mr. Harper said. "Chicago is seven times larger than Milwaukee. Therefore there has been almost twice as much building here, in proportion, as in Chicago," he said.

Milwaukee with 3,659 building permits issued during the past month leads every city in the Seventh Federal Reserve district—Wisconsin, Michigan, Illinois, Iowa and Indiana—statistics show. The past month's figures show a gain of 12.7 per cent over the same period last year. Permits numbering 3,659 were issued during the past month by Mr. Harper. The permits have a total valuation of \$2,590,634. During the past week, 842 permits for \$531,502 worth of building were issued in Milwaukee compared with 749 permits valued at \$475,304, for the same week last year. For the year to date, 26,744 permits have been issued for a total of \$23,101,386 as against 23,874 permits for \$17,739,973 at the same date last year.

Will Continue Building During Winter.

The establishment of a building trades labor bureau, exchange of employes by building contractors, and a study of transportation to insure prompt delivery of building materials, were planned at the first fall meeting of the General Contractors' Association, a branch of the Associated General Contractors of America, held in the Hotel Pfister, Milwaukee. The plan of the association is to continue building operations in Milwaukee during the winter and to make arrangements for steady employment of men in the building crafts. The association will meet the first and third Fridays of each month. Officers of the association are: T. J. Baker, president; R. L. Reisinger, vice-president; F. R. Bell, secretary; W. F. Tubesing, treasurer, and S. M. Siesel, director.

Lower rates on brick shipped by freight to points within Wisconsin were ordered this week by the railroad commission of the state to take effect immediately. The new schedule of interstate freight charges applies also to clay concrete products taking brick rates. The rates ordered, reducing shipping costs on brick to slightly above the level in force before an increase was granted in 1918, are:

Distance.	Rate in cents per 100 lbs.
10 miles or under	3.4 cents
30 miles	3.6 cents
50 miles	5 cents
70 miles	5.8 cents
90 miles	6.4 cents
120 miles	7.2 cents
140 miles	7.7 cents
160 miles	8.2 cents
180 miles	8.7 cents
200 miles	9.2 cents
240 miles	10.2 cents
280 miles	11.2 cents
300 miles	11.7 cents
350 miles	12.9 cents
400 miles	14 cents

Omar Gaston, president and general manager of the Watertown Brick and Tile Company, Watertown, Wis., announces that the company has increased the production of its plant to 15,000,000 brick annually by the installation of modern machinery and the remodeling of the plant. Until the opening of the present season the capacity of the plant was approximately three million brick a year. With new and modern brick making machines, capable of turning out six thousand brick per hour and the latest improved drying ovens the plant now has a capacity of close to fifteen million brick per year at a considerable less cost per thousand than heretofore. Demand exceeds supply even with the present arrangements, officials of the company declare. With the opening of the fall building boom unfilled orders are expected to amount to greater proportions than they are at present. President Gaston stated that the coal and railroad strikes did not as seriously affect the company as they did other plants in the state due to the fact that the company was fortunate in securing cars and in having a large supply of coal on hand.

With \$30,000,000 being spent in Milwaukee this year for building and a continuation of this broad expansion movement indicated for next year, building interests the country over are taking a new interest in the fourth annual food and household exposition to be held at the Auditorium Oct. 23 to 29. Building material concerns everywhere, especially in Milwaukee, will have exhibits at the show. The exposition will this year more than ever be a shopping center for hundreds who are either contemplating the building of new homes or who are ready to furnish newly built ones. Brick manufacturers and jobbers of the city will have a one hundred per cent representation at the exposition, a canvass shows. The attention of builders throughout the country is centered on Milwaukee, inquiries prove. The exposition with its 100,000 buyers will as a result thereof, be almost as much a building materials exposition as a "food" show, the term by which it is generally referred to.

Death of Pioneer Brick Maker.

George H. Chase, 84 years old, pioneer Milwaukee citizen, and founder of the E. Chase & Sons Brick Manufacturing Company, died at his home in this city. Mr. Chase died of a general breakdown in health. Mr. Chase was probably the oldest resident of Milwaukee in point of years spent here.

Born in 1838 in Milwaukee his life was an ever-changing adventure. Until 1860 he lived in Milwaukee without interruption. Then he set out to hunt gold in California. Later he took part in the Civil War and spent a great deal of his time quelling Indian outbreaks in Colorado. Mr. Chase returned to Milwaukee in 1876. With his father he founded the brick manufacturing concern of E. Chase & Sons. Mr. Chase was a thirty-second degree Mason, a member of Lake lodge, Wisconsin Consistory, Ivanhoe Commandery and Tripoli Temple. He was a member of the G. A. R., the Old Settlers Club and the Pioneers Association. Two sons and two daughters survive him. The funeral was held at his home on Hackett avenue, Milwaukee, in charge of the Masons. Burial was held in Forest Home cemetery.

Erwin Toepfer, president of the Acme Brick Company, Barton, Wis., entertained one hundred mason contractors from Milwaukee, West Bend and neighboring cities at a picnic and fish fry at Lucas Resort near West Bend, Wis. A number of prominent brick manufacturers attended the outing.

A BADGER.

We are willing to hazard a bet that there won't even be much more talk about importing building brick from Europe though they did leave brick on the free list.

"ONLY THE RICH CAN AFFORD TO BUILD FRAME HOMES."

The Building Boom at Florence, S. C., Marks It As the Most Progressive City in That State—and They Build With Brick.

ACCORDING TO STATISTICS given out by the Chamber of Commerce and a number of the building concerns of the city, Florence is now the most rapidly developing city in South Carolina. Especially is this true in new residences being erected. In every section of town new buildings are going up and the hammer and saw of the carpenter and the ring of the bricklayer's trowel is heard continually. A significant fact is that most of the homes being built are of brick construction.

The building boom which struck Florence in 1921 has gone on steadily without interruption and almost daily new homes are completed and the occupants move in. Even during the time of the most serious depression the South has known in years, there was no let up in building activities here, which speaks well for the growth of the city.

The above article clipped from a recent issue of the Florence Daily Times is printed in full not to advertise the hustling little South Carolina town in which it was printed but to illustrate what can be done in developing a demand for brick by popularizing brick construction.

Scarcely three years ago there were only two or three brick residences in Florence and they were of the more costly and pretentious type. Practically all home construction was of the frame type. For years Florence had been the fastest growing town in the state and every indication pointed to a continued growth so Lincoln S. Morrison, a brick man by birth, inheritance and profession, determined to demonstrate that brick could be so presented as to attract popular attention.

He selected a high-grade builder and organized a construction company for the purpose of building brick residences only and gave the company its first contract. By every possible publicity method he called attention to this project. On completion of the job which was an attractive six-room bungalow he advertised that he would sell the house and lot at actual cost plus a very small percent and soon disposed of the place.

Soon the construction company had all the business it could handle and other companies began pushing brick construction. Mr. Morrison then retired from the construction company as he did not wish to be in competition with other builders. The result of this campaign is reflected in the article above. Today it is apparently the ambition of every prospective home owner to build a brick home.

What was done in Florence can be accomplished in any community that is doing any building. The argument is all on the side of the brick type, but people must be shown as well as told. As Mr. Morrison puts it, "You must show them that only a rich man can afford to build a frame house. Show your faith by your works. It will pay. In addition to increasing your own business you have contributed to the permanent wealth of your community and made life more comfortable and safer and the appearance of your town more beautiful and attractive."

Since cost is always a factor in the marketing of drain tile, and freight is an item in cost, one good way to help keep down cost is to work hard at developing business near home. This will give you better control of delivery as well as reduce costs, and it will also lessen competition in the tile trade.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

THE QUALITY ELEMENT.

THE FUTURE of the hollow building tile industry depends considerably on the regard those engaged in making this tile have for the element of quality in their products. There is not another building material which has a much better or greater promise of progress than hollow building tile, provided those promoting its use can hold and continue to build up public regard for and faith in this product.

A plea was recently made in these columns for maintaining the standards which have at great cost been set up by the National Hollow Building Tile Association in co-operation with the Bureau of Standards and other bodies devoting their attention to research work and standardization of those sizes and qualities which seem to be most useful. Along with this was given a schedule of dimensions and weight so that those who are not already informed might have before them definite information as to what constitutes a standard article in hollow building tile.

Surely these standards should be lived up to and thereby made more useful and worth while. And even that is not enough. There should be that pride of industry which makes men seek to put quality into their products that will keep them even above standard.

The man who does not take as much pride in strengthening the quality elements in his products as he does in improving the efficiency of manufacture so as to get a nice profit is missing one of those things which play an important part in begetting permanent success in business. The men who attain a high place among the counsel of men in industry, and prestige as authorities in the public mind, are men who find enough pride in the quality of their product that they are continually seeking for ways and means to improve the quality as well as to improve the process of manufacture and methods of merchandising.

So if you haven't gotten this quality idea into your head right, you are missing something that is worth while and it is time to get busy and see how much more in the way of satisfaction you can get out of putting more emphasis on the element of quality in your products.

MR. E. R. STURTEVANT JOINS FRASER BRICK CO.

E. R. STURTEVANT, who was one of the original organizers of the Hollow Building Tile Association some five years ago, and has been Secretary-Treasurer of the organization continuously since that time, has resigned from the association work that he might avail himself of a very favorable business opportunity, and he has now become as-

sociated with J. H. Payne of the Fraser Brick Co., Dallas, Texas.

Mr. Sturtevant has been an earnest, forceful worker, and a strong factor in the progress and development of hollow building tile in public favor as well as in bringing about standards and uniform practices which make for the better welfare and further development of the industry. That his presence will be missed and that his resignation was accepted with regret should go without saying. His many friends, however, naturally desire to see him do that which is best for himself and wish him the big success which he deserves in his new undertaking.

In his farewell letter bulletin to the members of the Hollow Building Tile Association Mr. Sturtevant makes some recommendations which should be followed earnestly, particularly the following two:

"Everyday proves the crying need of better standards in our industry. Thin, flimsy, brittle tile is being furnished under pressure of keen competition to the ultimate loss of the industry as a whole, and if continued will bring disaster. The development of proper standards of manufacture is a vital need and the Association work along this line must and should be continued. In my judgment, the work of the Standards Committee is the most important part of our association activity. Under this committee building code work, which merely means the incorporation of proper standards of tile in city ordinances, is carried on. Your association is doing a valuable work along this line, which is helping every manufacturer of tile.

"The promotion of hollow tile must be continued. The public is not familiar with the advantages and economies of this product, dealers do not appreciate its advantages enough to carry it and contractors are loathe to use it. We meet resistance all along the line and can only overcome it by energetic publicity. Whether this publicity be carried on by the use of space or by field men or in some other way offers difference of opinion as to method, but there should be no difference of opinion as to the necessity of promotion work. Adequate funds must be provided by the manufacturers of hollow tile if the industry is to grow, and it is the writer's firm conviction that the industry will not grow and progress as it should until such funds are provided."

J. S. SLEEPER SUCCEEDS E. R. STURTEVANT.

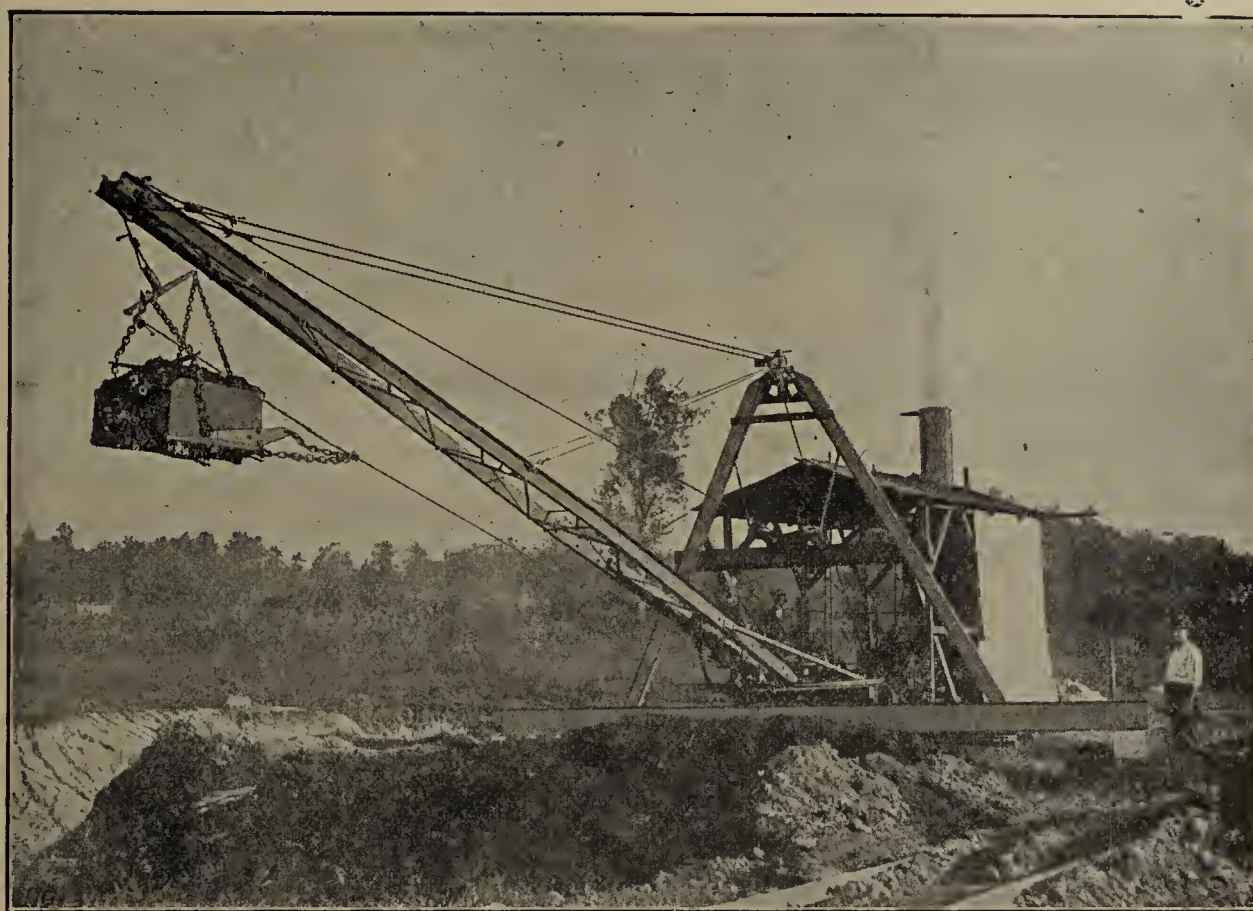
The vacancy caused by the resignation of Mr. E. R. Sturtevant as secretary of the Hollow Building Tile Association was filled by the appointment to that position of Mr. J. S. Sleeper, who is not new to the Association, for he has been identified with the organization since the middle of

1919, at which time he was selected as advertising manager to carry out an extensive publicity program.

The executive committee of the Hollow Building Tile Association is as follows: Mr. James T. Howington of the Coral Ridge Clay Products Co., Louisville, Ky., President; H. M. Keasbey, National Fireproofing Co., Pittsburgh, Vice-President, and H. C. Downer of the Malvern Fire Clay Co., Malvern, Ohio, Treasurer. These gentlemen will ably assist the new secretary and we are sure he will find his new work most interesting and pleasant. We congratulate him and also the association.

STEELE DRAG LINE EXCAVATOR.

OF RECENT YEARS there has been a demand for a more satisfactory and economical method of digging and loading clays, and so the inventive faculty has been brought to bear on the subject and the drag line excavator was developed. We illustrate an up-to-date appliance



The Steele Drag Line Excavator.

of this sort recently patented by J. C. Steele & Sons, of Statesville, N. Car. This machine is especially adapted for wet clay holes where water backs up, making the use of the steam shovel impractical.

With the drag line excavator, the machine and the cars both are above the surface level. Another important feature claimed for this machine, is that it will dig, with an uneven bottom in pit; that is, where there are sand bars or rock deposits, it will dig over and around them, taking all the clay and leaving the material not wanted. The machine has many advantages, which Messrs. Steele & Sons, will be glad to explain to any readers of The Clay-Worker desiring to know more about it. See their ad on page 414.

She never powders up her face—

For this I love my Sadie.

I'll see her when the circus comes,

For she's the bearded lady.

—Pennsylvania Punch Bowl.

CLAY TRADE NOTES.

The Excelsior Brick Company, of Montgomery, Ala., will rebuild the brick plant that was recently destroyed by fire.

M. F. Ackerman is planning to establish a brick manufacturing plant at Dade City, Fla.

W. J. Savage & Company will erect an addition to its factory at Knoxville, Tenn. It will be located at 912 West Clinch Avenue, will be of fire-proof construction, walls of brick and steel truss roof. The cost will be \$20,000.

The Versailles (Mo.) Clay Plant ran out of coal during the coal strike and was compelled to use coal mined near Excelsior, a small mine near here. Tests with the coal proved that it was fine boiler coal and that it was fairly good for kilns, enabling the company to continue its operations without shutting down. It was first feared that the coal would not be adapted to the use of the clay company.

A force of fifteen men and eight teams is getting out 16 carloads of fire clay a week from the A. P. Green Fire Brick

Company's pit just south of Fourth Street in Fulton, Mo., alongside Town Creek. The force was doubled about a month ago. Practically all of the work is being done by piece and the daily payroll is about \$70. The first clay is being shipped to the Mexico, Mo., plants of the company, where it is being used to tone up clay from the company's mine. The Green Company is operating both its plants in Mexico and having increased its factory production was compelled to increase the production of its Fulton mine. The Mexico clay is of extra good quality but it has not quite the heat resisting power of the Fulton clay, so that when the two are mixed together it makes an ideal quality of brick, better than either one of them would make separately. The Green Company owns several acres of land in Hopkinsville, a suburb of Fulton. It is understood the company would consider purchasing additional clay land in or near Fulton, if it could be had at a satisfactory price.

All signs point to a new era of vastly enlarged uses for clay products.

Written for THE CLAY-WORKER.

IN THE PHILADELPHIA BRICK MARKET.

EVERY BRICK PLANT in Philadelphia and vicinity is working at capacity, and indications are that this condition will exist for some time to come. The price on common brick is maintaining firmness, but the fancy grades have been increased slightly.

There is still an abnormal demand for all classes of brick, and the manufacturers declare that there is little likelihood of a decrease in prices at this time.

The Philadelphia Brick Company's yard, Twenty-third street and Passyunk avenue is being dismantled, following exhaustion of clay. This yard and several others have been in this vicinity for many years. Years ago they were practically isolated from the rest of the city, but now with the tremendous increase in dwelling construction, and the trend of the city in that direction in its expansion, dwellings have practically engulfed the old yards. The Philadelphia Brick Company's yard has been turning out brick for thirty years, and had an annual capacity of approximately 10,000,000.

The following prices have been quoted by local manufacturers, plant delivery: Salmon, \$13.50; hard, \$17 to \$18; straight hard, \$19.50 to \$20; stretcher, \$21. Fancy bricks for carload lot at site of operation are quoted: Face brick, smooth, reds, buffs and grays, \$32 to \$50; Colonials, \$28 to \$32; tapestries, \$35 to \$45; double-faced brick, tapestry finish, \$58 to \$60; enameled brick, \$115 to \$140; paving brick, \$36; paving block, \$52; packing house brick, \$46 to \$48, and hollow brick, \$26.

Because of this city's proximity to the coal mines the effect here has not been felt as hard as elsewhere, but nevertheless the strike of the miners has effect enough to retard production somewhat, to say nothing of forcing some of the manufacturers to pay a higher price for coal than they had contracted for. The coal people could not fill the orders, and necessarily the manufacturers had to go into the open market, which meant higher prices. A survey of the big building operations shows that the brick is being delivered more regularly than they had been a month ago, and the builders are showing a slight relief because of this condition.

At a recent meeting of the Lions Club, Manton Hibbs, engineer, Bureau of Building Inspection, announced that he thought construction progress had been retarded for at least six months because of the miners' and railroad strikes, and that even at the expiration of that period, the industry will not have fully recovered enough to begin with where construction left off when the strikes began.

Bricklayers are extremely scarce in this city, and it is claimed that an unusual condition has set in. This city is receiving men from Baltimore, while the Philadelphia men are going to New York. Those from the latter city are going to Chicago. It is further claimed that each time a batch of these men leave this city, the price of bricklayers goes up a notch. At this time they are receiving from \$12 to \$15 a day, and it is said that some plasterers are receiving \$18 a day. Seldom an advertisement for bricklayers and plasterers appears in the local papers that does not contain "and bonus," which is from fifteen to twenty-five cents an hour.

The realty value of this city is \$2,050,385,000. This is the assessed valuation by wards for the present year, and was compiled by the Board of Revision of Taxes. The suburban total is \$86,332,000, farms, \$21,583,000, or a grand total of \$2,158,300,000. The total increase for all classes of taxable real estate for the present year over last year is \$104,532,000.

Philadelphia to Have a Sesqui-Centennial.

For many months there has been much talk of a Sesqui-Centennial Exposition to be international in scope and to be

held in this city in 1926. Colonel D'Olier, former head of the American Legion, has been made director general of the fair, and plans have been effected by Paul Cret, internationally known architect, who is an instructor at the University of Pennsylvania. Present indications are, however, that the fair will not be as big as had been hoped. It is rumored that a group of real estate men have gobbled up every bit of real estate in the territories that would be needed by the Committee for the erection of buildings, which would not only be for the fair, but also act as lasting monuments, and furthermore, be a stepping stone to beautify this city. The people are beginning to feel that the city will have to pay too much money for the properties it condemns, which will necessarily advance the tax rate.

It is said there is a shortage of about 12,000 houses, of the two-story brick type, that could be bought or rented by the average person for a nominal rental. If the plans for the fair are carried out, the housing shortage will become much more acute, and actually advance the now heavy rentals which predominate in this city.

Upon his arrival in this country from Europe, Edward T. Stotesbury, financier and chairman of the Finance Committee of the Sesqui-Centennial, said that this city should not have an exposition that would be international in scope, because the people in foreign countries are thinking of their own condition right now, and will be that way for some time to come. Only once did he hear the fair mentioned while he was abroad, and this was expressed by a Philadelphian. His statement has caused some consternation among certain real estate men, it is said, and reports are that immediately after his utterances, several of them endeavored to unload part of the vast amount of real estate they are carrying.

It is probable that the Philadelphia brick manufacturers would be unable to supply the demand that would be created if the Sesqui-Centennial goes through. Huge buildings are planned, that would require an enormous amount of all classes of building materials, and coupled with the great building boom that is now in progress, outside help would be necessary.

This city's dwelling construction total is now more than 8,000 houses costing approximately \$45,000,000, which is about fifty per cent of the entire cost of all construction in this city for which permits have been issued. There is an increase of \$132 in the average cost of the two-story dwelling now compared with the average cost in August. The total for all classes for September was \$11,714,140.

Another association in the interest of construction has been formed. It is known as the Philadelphia Building Congress, and D. Knickerbocker Boyd, architect, was elected temporary president. It is an association that has been formed for the interest of everybody associated in the industry, and embraces in its membership, material manufacturers, distributors, architects, engineers, builders, contractors, labor leaders and representatives of the public. A. QUAKER.

ALUMINA FROM CLAY.

It is well enough known that a good clay may contain 30 to 40 per cent of alumina. And there have been several interesting plans proposed for recovering this alumina by a process of fusion, so the northwest station of the Bureau of Mines at Seattle recently undertook investigation of the subject. The result is; they report that some alumina can be obtained by the process experimented with, but the prospects of its successful application are extremely poor because of highcosts and other faults.

POTTERIES OF THE U. S. SHUT DOWN OWING TO A STRIKE OF OPERATIVES.

GENERALWARE POTTERIES in the United States suspended operations October 1, and plants will remain idle for an indefinite period. Pottery employes, or those affiliated with the National Brotherhood of Operatives, through a referendum vote, voted to strike unless manufacturers would agree to reinstate a wage decrease of 7 per cent, or the same wage as prevailed between November and August last.

Members of the United States Potters' Association met in the Blue room of the William Penn Hotel, Pittsburgh, Pa., September 22, when a complete report of the work of the labor committee of the association was presented by W. E. Wells of the Homer Laughlin China Company, chairman of the committee.

Manufacturers did not take long to give the labor committee a vote of confidence, and then, after discussing the strike of the employes and other issues that will result because of the suspension of operations, left any future adjustment of the situation entirely in the hands of the labor committee.

Ministers in the East Liverpool district on Sunday, September 24, made public appeal in their churches for an early solution of the differences existing between the employes and the manufacturers. It is recalled that the manufacturers at the recent wage conference held in the Hotel Cleveland, Cleveland, Ohio, offered the pottery workers the same scale they have been working under since November last, suggested no reduction, and even granted particular changes in working shop rules.

The majority of manufacturers have cancelled orders for raw materials, such as clays, flint, spar, sand and other bulk materials, and have also summoned salesmen home from their different territories.

Packers in many plants have been working nights, being paid time and a half for this labor, and also worked in particular instances Sunday, September 24, for which they received double time. Manufacturers desired every piece of ware to be in the hands of distributors that was possible to pack by 4 o'clock the afternoon of September 30.

Just when another referendum vote will be taken by the trade on the question of returning to work on the old scale, no one can predict at this time. The power to call a referendum vote lies with the executive board of the National Brotherhood of Operative Potters, or such a vote can be ordered upon petition of eight local unions affiliated with the Brotherhood.

The manufacturers will permit their offer to continue the old scale of wages to remain open for a reasonable period, no particular time being so far announced, and should a referendum vote be taken again, it will be on the two questions of "return to work" or "continue the strike."

It is recalled in this connection that during a labor difference between the pottery manufacturers and employes back in 1881, the generalware plants were idle for eleven months. There was another strike in 1893—the last general strike in the trade—and this kept plants idle seven months.

Information is taken from the last financial report of the National Brotherhood of Operative Potters, presented at the annual convention of the organization in Atlantic City in July last, that the Brotherhood has a "defense" fund of approximately \$700,000. The membership of the Brotherhood is placed at between 6,500 and 7,000, this of course including those employed in the sanitary branch of the industry.

Following receipt of the news that a strike in the generalware branch of the industry was inevitable, buyers and job-

bers hastened to the East Liverpool and other Ohio districts seeking immediate shipment of all orders on file. Requests of many along this line were unreasonable and impossible. Some white ware on the floors could be shipped with some promptness, that is true, but so far as decorated ware is concerned, the situation presented quite a different phase.

According to the rules of the Brotherhood it required a two-thirds majority of the vote cast to cause a strike and suspension of operations, and the known fact that hundreds of pottery workers did not cast a ballot is admitted the reason why the issue "went" the way it did. Should another referendum ballot be cast, only 1 per cent of the vote is necessary to cause the resumption of operations. It is now recalled that in the immediate East Liverpool district when the strike vote was taken, seven local unions voted to strike, seven voted to remain at work and the vote of another local union was a tie.

Manufacturers insist that it will be impossible to grant a 7 per cent advance to labor at this time. And it is this one question, the 7 per cent advance in wages, that has caused the plants to enter an indefinite period of idleness.

Cities affected by the order include East Liverpool, Akron, Coshocton, Crooksville, Salineville, Steubenville, Wellsville, Salem, Sebring and East Palestine in Ohio; Wheeling, Clarksburg, Huntington, Chester and Newell in West Virginia; New Castle, Beaver Falls, Cannonsburg and Fallston in Pennsylvania; Evansville, Ind.; Buffalo, N. Y.; Trenton, N. J., and Mt. Clemens, Mich.

Two avenues of preventing a long tieup are open—

1. Submission of a new proposition by the manufacturers, on which a referendum vote of the workers would be called.
2. Change of sentiment to prompt a petition by eight subordinate unions to seek a referendum to call off the strike. In this event a majority vote would decide the issue.

All pottery workers, with the exception of laborers who are not members of the union, are paid under a sliding scale and on a piece work basis.

Their wages range from \$4 to \$10 per day. They sought a 7 per cent increase. Manufacturers offered to renew the old agreement.

DEATH OF THE FOUNDER OF THE ZANE POTTERY.

Adam Reed, 62, prominent local pottery manufacturer, is dead at his home at Zanesville, O. His career in the clay industry began back thirty-five years ago, when he was employed in the S. A. Weller Pottery. Later he formed a partnership with John D. Peters and founded the Peters & Reed Pottery, about twenty-four years ago. When Mr. Peters retired from the industry his interests were taken over by Mr. Reed and the plant was operated under the name of the Zane Pottery. Mr. Reed was president and general manager of the company when he resigned. Surviving are his widow and two children.

BRICK PLANT WANTED AT BIG STONE GAP, VA.

The enterprising young men of Big Stone Gap, Va., have formed a boosters' organization to put that town on the map more effectively than it has been heretofore. Among the industries they hope to establish in the immediate vicinity is a brick and tile plant. There are immense deposits of clay and shale from which an inexhaustible supply of the necessary raw materials may be obtained and it is estimated that there will be a large local demand. Big Stone Gap, it is claimed, is the natural gateway for the greatest coal field in the United States. The nearest seaport is Charleston, S. C., and there is now under way a project for a highway from this immense Kentucky coal field to Charleston via Big Stone Gap.

OFFICIAL ANNOUNCEMENT



THIRTY-SEVENTH ANNUAL CONVENTION TO BE HELD AT CLEVELAND, O., FEB. 5 to 10, 1923.

OBEDIENT TO THE expressed wish of a very large majority of the members of the National Brick Manufacturers' Association, for a meeting of the two national building brick associations during a given week and in the same city, it has been decided to hold the thirty-seventh annual meeting of the N. B. M. A. in the city of Cleveland, Ohio, the week of February 5th, 1923.

A majority of those voting, not all of the members voted, expressed a preference for Chicago as the convention city for 1923; but a still larger number expressed preference for a meeting of the two national brick associations at the same time and place and, as the directors of the Common Brick Association have chosen Cleveland for their annual meeting, we feel sure the above choice of that city will meet the approval of practically our entire membership. We also feel sure that there will be a very large attendance at Cleveland.

THE CONVENTION CITY. Cleveland is the very heart of the clay industries of the nation. The N. B. M. A. met there last in 1916 when a high record of attendance was registered, nearly a thousand being present. Since that time new hotels have been built, the city has grown immensely in every way, population, wealth and amusement features, making it one of the most attractive cities in the nation.

There is in the immediate vicinity a number of large clay-working establishments of all sorts which will be open to delegates and where up-to-date equipment may be inspected. But a few miles distant are the clay centers of Akron, New Castle and Youngstown and the homes of the leading clay machinery firms at Bucyrus, Canton, Dayton, Plymouth, Wellington and Willoughby, to which there will be pilgrimages by many of the delegates convention week.

From every viewpoint the selection of Cleveland is a happy one and an old-time rousing big gathering is sure to assemble there convention week.

WINTON HOTEL HEADQUARTERS: The beautiful Winton Hotel will be headquarters for both conventions. It is most admirably adapted for the transaction of the business and social functions of the two associations. Never have we enjoyed more sumptuous accommodations and facilities at any of the annual meetings. The convention halls and display rooms are unsurpassed and the entire equipment and service is of the highest class. Every guest room in the Winton has a bath and the rates are reasonable, from \$3.00 to \$5.00 for single and \$5.00 to \$7.00 for double rooms. Where extra guests occupy rooms with their friends, the added charge will be \$2.00 per person. There is a fine cafeteria or coffee shop that affords quick service for those desiring it, while the regular dining room service is first class in every respect. One entire floor has been reserved for the trade missionaries,

the machinery and supply dealers, and specific reservations will be made and observed. All sessions and functions will be held at the Winton. Early reservations are requested. The Union Station cars pass the door of the hotel.

An excellent program is in course of preparation, which, with further particulars relative to reduced railroad rates, etc., will be given subsequently. Those desiring further information relative to the meeting, the requisites of membership, or other details are requested to address the secretary at Indianapolis. **THE EXECUTIVE COMMITTEE,**

T. E. WILSON, President.

THEO. A. RANDALL, Secretary.

THE CLEVELAND CHAMBER OF COMMERCE BIDS US COME TO THE OHIO METROPOLIS.

Mr. Theodore A. Randall,
Secretary National Brick Manufacturers' Association,
Indianapolis, Ind.

Dear Sir:—

The Cleveland Chamber of Commerce and the City of Cleveland desire to second most heartily the wish of your Cleveland members that your 1923 convention be held in this city.

We have every confidence that Cleveland's wonderful civic, industrial, commercial and financial growth of the last decade will afford your members additional incentives for a visit to our city.



Winton Hotel, Cleveland, Ohio.

The very best modern hotel accommodations afforded by several new large hotels insure ample and comfortable quarters at reasonable rates. Numerous well arranged meeting rooms conveniently located will contribute to good attendance at business sessions.

The central location of Cleveland for your membership and the excellent transportation facilities make it an easy city to reach.

There are many enterprises and developments—commercial and educational—which we feel sure would be of special interest to your members.

We trust it may be consistent with the best interests of your organization to select Cleveland for its next convention. The Convention Board will be happy to lend every assistance in arranging preliminary details.

Respectfully,

NEWTON D. BAKER,

President, Cleveland Chamber of Commerce.

D. S. HUMPHREY,

President, Convention Board.

Cleveland, October 16, 1923.

RYTT ENJOYING CAMP LIFE IN MAINE.

We are in receipt of an amusing post card from I. A. Ryttenberg, of Sumter, S. C.—Rytt for short. It is a picture of a beautiful lake scene, Camp Hiawatha for Girls, Cornish, Maine, bearing the legend:

"The country stretching out beneath the skies,
Each vale and mountain brings a new surprise."

Rytt remarks that the camp is deserted but does not say whether the girls left before or after his arrival. Further explanation seems desirable.

SPLENDID OPPORTUNITY FOR NEW CLAY PLANTS.

There is a section of Pennsylvania that has unusually fine deposits of clay and coal and unexcelled transportation facilities. This section is to the northeast of Pittsburgh and southeast of Franklin and Oil City, embracing such cities as Clarion, New Bethlehem, Summerville, Red Bank and Du Bois. New enterprises are welcomed there and every opportunity afforded for the successful operation of clay products plants is assured. See the advertisement of the Lake Erie, Franklin and Clarion Railroad on page 390 of this issue.

NEW SECRETARY OF THE N. P. B. M. A.

Mr. Edward E. Duff, an engineer who has been associated with the Eastern Paving Brick Manufacturers' Association for the past three years, has been chosen as secretary of the National Paving Brick Manufacturers' Association to fill the vacancy caused by the resignation of Maurice B. Greenough, who will be associated with the Southern Clay Manufacturing Co. of Chattanooga, Tenn., after the first of the year. Mr. Duff was the unanimous choice of the Board of Directors of the National Association and comes highly recommended by his recent associates. He graduated from Carnegie Institute of Technology in 1913, was Captain of Engineers during the war, was at one time engineer for the Pennsylvania Railroad, and also borough engineer in Sewickley, Pa. He will take up his duties as secretary of the N. P. B. M. A. the latter part of the year.

"RADIA" FRONT BRICK PROVES POPULAR.

Several months ago, the Birmingham Clay Products Company installed a Stocke rough texture attachment to their dry press brick machine. Massah John W. Sibley, manager of the plant, reports that same has been operated with decided benefit. They christened their rough texture brick "Radia" and it has proven a very popular brand; during the past season they have been used in the construction of a number of

beautiful buildings in Birmingham and vicinity. The "Radia" brand brick are of varied shades and colors. Their Red Matts produce a soft velvety effect which has made the brick very popular. A cut of their press with the rough texture attachment is shown on page 319 of this issue.

DETROIT BUILDING NEWS.

CONSTRUCTION IN DETROIT totalled \$10,014,311 during September, which was made up of 2,444 permits, which were subdivided into 1,899 permits for new work to cost \$9,562,723, and 545 permits for alterations and additions to cost \$451,588.

These figures compare with 1,797 permits to cost \$5,795,509 in the same month of last year. The increase was 647 permits and \$4,218,802 in cost.

A total of 1,622 new homes will be provided upon completion of the housing projects for which permits were issued in September. For the same month of last year the total was 739 families, while for August, 1922, it was 1,476 families.

The report of the Builders & Traders Exchange for the closing weeks of September and the opening of this month show a much greater activity in building circles and also indicate that the offices of the architects are well supplied with new projects.

The Closing of the Ford Plant.

The closing of the Ford plant did not affect the city, because it only lasted a few days. However, had it lasted longer, it would have put a heavy crimp into the building business, as well as to all of the other industries and businesses of the city.

It is estimated now that Detroit will have to show a monthly building average of \$5,500,000 for the next three months if it is to break all previous annual building records.

September rolled up almost twice as much as that, so there is some leeway for the remaining three months, with a surplus of \$5,000,000 already in the year's total.

Detroit is now fighting a proposal to divide the city into zones and the campaign is a hot one. It is claimed on the one side that the zoning system is practically confiscation of property and that it will ruin the city, while the proponents of the plan claim that it will prevent the city from falling into a condition of factories and other such places honeycombing the residential sections.

The ordinance is being torn to pieces and revamped daily and it is doubtful just what the effect of the scheme will be even if it does become a law. The layman pays little attention to it but the real estate men are out strong, while the politicians are in doubt as to just what side of the question the votes are really on. They watch for such things, you know.

STANDARDIZING GOVERNMENT CONTRACT FORMS.

Gordon A. Ramsey, chairman of the Inter-Departmental Board of Contracts and Adjustments for the government at Washington, is making commendable efforts to standardize forms for government contracts and bidding and has been asking the co-operation of material men and contractors in the work of making up forms that will be fair and satisfactory as well as uniform. A tentative form has been printed and submitted together with a reply page on which those interested are asked to make suggestions for any changes or amendments which they think desirable. Answers and comments should be addressed to Inter-Departmental Board of Contracts and Adjustments, Bureau of the Budget, Treasury Department, Washington, D. C.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,427,831. Method of Making Bricks. William A. McCool, Beaver Falls, Penna., patentee.

The herein described method of making bricks, blocks, or the like from initially heated bituminous material, which consists in cooling the material to solidify the same and render it resistant and thereafter reheating the same to its critical temperature and simultaneously shaping it into the desired form.

No. 1,428,470. Brick Wall Construction. Edward R. Brainerd, Los Angeles, Cal., patentee.

A building block having one surface provided adjacent to its edges with substantially V-shaped grooves that are adapted to receive the wedge-shaped ends of wall panels, and there being a dovetail recess formed in another surface of said block adapted to receive plastic binding material in order to form an interlocking joint with an adjacent similar block.

No. 1,420,296. Drying Kilns. Rolf Thelen, Madison, Wis., patentee.

A progressive drying kiln combined with suitable means for the movement through the kiln of the material being dried, said material being edge-stacked crosswise on suitable trucks, of an exhaustor fan, means for driving the fan, air baffles, means for conditioning the air upon entering the kiln, and means for conditioning the air after each downward pass.

No. 1,428,623. Load-supporting Building Tile. Charles R. Birdsey, Hinsdale, Ills., patentee.

A building tile having an inspection opening extending from its exterior inwardly thereof, in combination with reinforcing means embedded in the tile and terminating short of the exterior of the tile, said reinforcing means extending to said sight opening.

No. 1,429,997. Apparatus for Drying Clay Bodies. Elwood B. Ayres, Philadelphia, Penna., patentee.

The combination in apparatus for drying clay bodies, of a tray for holding a mold and the body, which is formed thereon; and a casing mounted on the tray and enclosing the mold and body to be dried, said casing having a section of absorbing fibrous material located in close proximity to the body being dried.

No. 1,422,949. Building Brick. John E. Evans, Chicago, Ills., patentee.

A brick for building purposes which comprises a body portion, a flange on the inner edge of a side of said body portion, a recess formed in the inner edge of the opposite side of the body portion adapted to receive the aforementioned flange of an adjoining brick in a structure, a groove formed in the periphery of the body portion on one of said sides, a wedging tongue on the periphery of the opposite side adapted to be received in the aforementioned groove of a contiguous brick in a structure, said flange being adapted with an opening to receive a nail or other fastening extending diagonally therethrough.

No. 1,430,019. Ceramic Press. Harry D. Lillibridge, Zanesville, Ohio, patentee.

Pressing mechanism including a compression plunger, a feed nut and a rotative screw whereof said screw is free from endwise or traveling movement and acts by its rotative

motion to impart sliding motion to the plunger, and a friction drive co-operating with said screw for imparting rotative motion only thereto.

No. 1,430,094. Sectional Clay Block Structure for Sewers and Drainage. Frederick H. Meier, Webster City, Iowa, patentee.

In a device of the class described, a plurality of sections of plastic material, each comprising an inner and outer wall and transverse connecting walls, each section having at each side a plurality of projecting hollow tongues spaced from each other longitudinally of the section and thinner than the body of the section, each tongue being spaced from the adjacent transverse wall, so as to leave a hollow space in the tongue and in the adjacent body portion of the section extending from the interior of the tongue beyond said tongue and into the interior of the body of the section, the tongues on one side of each section being staggered with relation to the tongues on the other side thereof, said sections being arranged in a tile or the like, comprising a plurality of sections arranged in a circle with the tongues of the side edges of each section projected between and beyond the tongues of the side edges of the adjacent section and into the bodies of the adjacent sections.

No. 1,430,70. Drying Kiln. Elmer E. Perkins, Chicago, Ills., patentee.

A drying kiln, comprising a drying room, heating means arranged at one side of said room near the floor, means for delivering air to said room above and in proximity to said heating means, means for washing said air prior to its delivery into said room, and a ventilating pipe opening into said room remote from said heating means.

No. 1,424,560. Tunnel Kiln. Arthur M. Duckham and Arthur Kent, London, England, patentees.

Patent for a tunnel kiln of the character in which gases have a horizontal pathway longitudinally of the tunnel, comprising trucks arranged so that the length of the truck is transverse to the length of the tunnel and baffle walls carried by the said trucks parallel to the length of the truck.

No. 1,430,991. Process for Making Bricks and Their Products. Gustavo Bernard y Hernandez, Habana, Cuba, patentees.

A process for making bricks which consists in forming a pasty mixture of quick lime and an astringent solution; adding to said mixture cement, fine gravel or sand and scoria of coal, pulverizing finely the resulting mixture, moulding it in brick shape and finally drying the same.

No. 1,431,125. Brick Veneer. Charles G. Robinson, Buffalo, N. Y., patentee. Patent assigned to The Beaver Co., Cincinnati, Ohio.

A weather board having one face grooved longitudinally and transversely and the grooves being spaced and arranged to present the appearance of three courses of laid bricks, the transverse grooves in the alternate spaces between the longitudinal grooves aligning and being staggered with respect to the grooves in the intermediate spaces, whereby to facilitate the matching of the board during the laying by providing in each board a plurality of series of aligned transverse grooves to align with one or more transverse grooves of the preceding board.

No. 1,431,137. Joint for Articles of Ceramic and Similar Materials and Method of Producing Same. Arthur O. Austin, Barberton, Ohio, patentee.

In combination a plurality of ceramic bodies having surfaces adjacent one another and spaced apart by interposed particles fused to said surfaces to connect said bodies to one another.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BRICK IS BECOMING more and more popular as a building material in Evansville and southern Indiana, according to John Andres, secretary and treasurer of the Standard Brick Manufacturing Company at Evansville, who reports that several nice orders have been received during the past month. He said that brick is being consistently used in residence and industrial work. Rugby brick is a popular residence brand this season, it was pointed out. Many new homes in Evansville and surrounding country are being constructed of brick veneer. In this construction, tile is faced with brick.

The Standard Brick Manufacturing Company is furnishing material for several additions and improvements being made at the gas and power plants of the Southern Indiana Gas and Electric Company at Evansville. The Evansville concern also is furnishing the brick for a new high school building that is being constructed at Owensboro, Ky. Material also is being furnished for several brick homes in Madisonville, Ky., and other towns in that section. Evansville brick also is being used in the construction of a new Baptist church at Mt. Vernon, Ind. A number of new brick residences also are being built in Evansville this fall.

The brick manufacturers report that they had a fairly busy summer but that their trade this fall has shown some improvement over the summer trade and that they are looking for building operations to remain active until the coming of cold weather. The car shortage has been affecting the shipments of brick some in this section during the past month or two, but the situation has grown some better with the returning to work of many of the striking shopmen on various railroads.

Fear a Coal Shortage.

The fuel situation is quite alarming at this time. Owing to the car shortage, many of the large coal mines in southern Indiana and western and northern Kentucky are being operated on a schedule of but two or three days a week. If this situation should continue for another month or two, brick manufacturers and owners of other industrial plants fear that coal prices may soar and that they may have difficulty in getting sufficient coal to keep their plants in operation. Coal prices right now are higher than they were during the world war and mine owners and coal operators say that they do not see any likelihood that prices will get any lower during the coming winter months.

A shortage of coal, caused by the car shortage, a few days ago forced the plant of the National-Helfrich Pottery Company at Evansville to close down, and more than 150 men were idle as the result. The company uses special coal from mines in Kentucky and near Oakland City, Ind., in which the officials of the company are interested. After a few days of idleness the plant resumed operations and is now being operated steadily.

Pottery Closes Down Owing to Strike.

The plant of the Crown Pottery Company at Evansville was closed on Saturday, September 30, following a decision by the Master Potters' Association of America to close their plants rather than agree to a demand by the operatives for a 7 per cent increase. A recent vote among the National Brotherhood of Operative Potters called for a general strike.

The general strike order was issued as a result of a refusal of the company to grant an increase of 7 per cent after it had made a reduction in wages a year ago. The employees at first demanded a 17 per cent increase, but this demand was modified. The Uhl Pottery Company, operating plants at Evansville and Huntingburg, Ind., were not affected by the strike as the employees do not belong to the union. The National Helfrich Pottery Company at Evansville reports its agreement will not end until later.

More than fifty representatives attended the national conference of advertising and sales managers of the manufacturing and wholesale firms identified with the national trade extension bureau at Evansville on October 19, 20 and 21. Representatives were present from Boston, New Orleans, Minneapolis, San Francisco and several other of the leading cities of the country.

Henry C. Kleymeyer, president of the Evansville Chamber of Commerce, led the delegation of Evansville business men and manufacturers to the annual convention of the Ohio Valley Improvement Association that was held in Louisville, Ky., the first week in October. The purpose of the association is to assist the national government in the building of locks and dams along the Ohio river. Already many of these dams have been constructed at an enormous cost. It is expected that work on a new dam at Cypress Beach near Newburg, Ind., ten miles above Evansville, will be started some time this year and this means the purchase of a big lot of building material. Mr. Kleymeyer, as stated in a previous news letter to The Clay-Worker, has secured an option on a strip of ground on the river front at Evansville and is urging upon the Chamber of Commerce of that city the formation of a holding company to take over the land and erect suitable river terminals that will cost in the neighborhood of \$300,000. With the building of the other locks and dams on the lower river, that have been planned, it is pointed out that these terminals will be needed to handle the expected increase in business.

Freight Rates Under Consideration.

A hearing may be held by the Interstate Commerce Commission at Indianapolis relative to the shipping rates which are paid by brick manufacturers in Evansville and other cities, according to Leslie LaCroix of the traffic department of the Evansville Chamber of Commerce. The hearing will not be held, however, unless brick manufacturers succeed in getting the commission to consider revising the new shipping rate that went into effect in October. Mr. LaCroix gave the following explanation of the controversy. Other brick manufacturing cities, such as Danville and Streator, Ill., have been able to ship their brick to the markets, such as St. Louis, Chicago and other large cities, at a lower rate than the Evansville brick makers. For instance, Danville could ship bricks to St. Louis for \$1.89 per ton, while Evansville was obliged to pay \$2.00 per ton. The distance from Danville to St. Louis is 180 miles, while from Evansville it is only 165 miles.

Through the efforts of the Traffic department of the local Chamber of Commerce, a hearing was held, with the result that the old rates were changed for rates of more uniformity. The new rates were to go into effect October 16 and according to these, Evansville would be able to ship bricks to the St. Louis market for \$1.85 per ton and the Danville rate was made the same.

Realizing that she is losing an advantage in the new rates, Danville will ask the Interstate Commerce Commission to leave the old rates in effect.

In case the commission grants a hearing on the question, Mr. LaCroix will go before the commission in the interest of Evansville shippers.



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THIRTY-EIGHTH YEAR OF PUBLICATION.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

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Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 78. October, 1922. No. 4.

CURRENT COMMENT.

The public lost the coal strike.

* * *

We are now facing a twin king problem of both Coal and Winter.

* * *

A mild winter would help us to punish the coal profiteers, and here's hoping we have it.

* * *

There are too many people telling us what is wrong with this country and not enough telling us what is right.

* * *

If we could just collect the losses due to strikes the past year, we would easily make enough money to pay that soldier bonus.

* * *

More money available at easier interest rates should encourage enlarging and improving industrial plants as well as stimulate the buying of the products.

* * *

There is interesting progress being made in glazed tile and in sanitary ware for bath-room equipment which points to a gradual public recognition of the superiority of these products.

* * *

No man has ever yet answered the question of what it costs to get into the brick business, but we have discovered that what it cost to get in is often only a small part of the capital it takes to make a real go of it.

* * *

With the amount of cash balance Mr. Ford is said to have in the banks, he could easily afford to shut down his plants for a week or two, but some of the brick men are

not in such a fortunate position in the matter of bank balances.

* * *

One of the common expressions of the day is that better conditions lie a little ahead. That is the trouble; they are always ahead, and quite often lie.

* * *

While we properly center a lot of attention on burning clay ware, let us not forget there is merit, too, in proper preparation of the raw material before it is made into shapes.

* * *

No matter whether plant enlargement is advisable or not this winter, there are very few but what may benefit from plant improvement which will make for better fuel efficiency and better products.

* * *

The piddling bits of trade for chimneys, flues and fire place work, are good things to look after and develop these days, because enough of this kind of business counts up and it often helps clean up stock on the yard.

* * *

The farmers are in good shape, with splendid crops, but they rightfully feel that the prices on their products are not high enough to be in keeping with wages and prices in the manufacturing industries, in the building trades and in mining.

* * *

It is claimed by West Virginia historians that Charleston, West Virginia, had the first brick paved street, which was laid in 1871, and though the pavers of that day were not comparable with the present-day products, it rendered good service for thirty-eight years.

* * *

One branch of the clayworking industry that has never made the progress it should in this country is that of roofing tile. That's a good subject for research and investigation with a view to putting more clay products on the roof as well as into side walls of homes.

* * *

Our railroads promise to be burdened with tonnage from now till after Christmas, but there are some signs that they are going to be able to cope with the situation, and one helpful factor is that our tonnage of export trade, which ties up lots of freight car service, is not so heavy this year.

ACTIVITY IN PAVING DEMANDS MORE BRICK.

The manufacturers of paving brick in the Central States are speeding up production in an effort to overcome the shortage in supply caused by the necessity of shutting down the plants during the summer months because of their inability to get coal. With an available supply of fuel, most of the plants are now operating at capacity, and delayed shipments are going forward in as heavy volume as the car supply will permit. All reports are there is considerable activity in paving work, and while the demand for paving brick still is in excess of the supply, improved conditions in the producing sections are making possible the resumption of activities on work that has been delayed.

ANTI-FIRE CRUSADES.

The idea of fire prevention week, of putting on a special drive or crusade for one week in the year, was put into action about ten years ago and has been continued since, fire prevention week this year was the first week in October. There is no doubt either but what these crusades have done some good. On the other hand, there is no doubt but what they have been disappointing and often have fallen short of

the hopes of those who have set about enthusiastically to promote them. The trouble with crusades and intensive drives is, we have had too many of them since and during the war and people have become so weary of appeals of this kind that they figuratively take to cover when such a thing is mentioned. Because of this fire prevention crusades have not in the main enlisted the warm and active support which they deserve, especially when we consider the fact that the toll of fire is tremendous and it is pure waste or destruction much of which can be prevented by exercising more care in building and more precaution generally against accidental fires. The results and the lack of results should make us thoughtful that we may think of and plan out more effective ways to get real interest and action in the matter of reducing the fire hazard.

WHAT HAPPENS TO STANDARDS.

We find reports which indicate that a few in the brick industry prefer to make brick in sizes that are larger than the standard, but this is not the thing that usually happens to standards, nor is it as objectionable as things which more commonly happen.

The more common trouble in connection with standards is the disposition to slight them either in the matter of size or quality and thus bring ill repute upon the whole industry. We have a graphic illustration of this in the lumber industry where at one time the standard thickness for dressed inch boards was put at seven-eighths. Members of the trade kept slighting this, partly by design and partly by dressing stock before it was thoroughly dry so it afterwards shrunk to less than standard thickness. This continued until eventually there was a revising of the standards and thirteen-sixteenths was adopted. Today there is an aggravating disposition to make boards dressed to three-fourths and this is causing some agitation in the lumber trade because it means another lowering of the standard.

In the clayworking industry we have had some examples of slighting the weight and quality of the standards set up in hollow building tile, which has caused trouble and must be corrected or it will bring the whole industry into disrepute.

In the matter of brick it is the same thing. We will eventually have to guard against making stock smaller than the standards set up. The few who make oversize are not harming the industry like those who may claim to be making standard and get the habit of slighting it until others follow suit and we have in the brick industry a repetition of what has happened in lumber.

Let us make the standards in brick and hollow building tile have a real meaning by faithfully following them both in the matter of sizes and other requirements in the standard specification.

GOOD WORDS FROM COOLIDGE.

At the recent Babson Industrial Conference Vice-President Coolidge uttered some excellent words of advice to both capital and labor and among the things said there are a few paragraphs which stand out conspicuously.

Mr. Coolidge assumes he will accept labor unions and that capital, labor and management will unite in bringing about a true industrial democracy. But, he states fearlessly that no democracy—political or industrial—can survive without discipline, organization and obedience. There must be law and order. Boards of arbitration must be created and obeyed in order for the wage workers themselves to get on. His own words are as follows:

"There has never been any organized society without

rulers. The great power of mankind has been created through unity of action. This had meant the adoption of a common standard. In most ancient times this was represented in the chieftain. In modern times it is represented by code of laws. The important factor to remember is that it has always required obedience. Democracy is obedience to the rule of the people."

He points out further that the failure to appreciate this double function of the citizen has led to misunderstandings and trouble and to regrettable tragedies.

Further in the course of his remarks he points the way toward true industrial democracy and the solution of many of our industrial problems by saying:

"In very many industries this is already taking place. Employees are encouraged to purchase stock in the corporation and are provided with credit facilities for such purpose. This gives them ownership. They are encouraged to make suggestions for the better conduct of the business. They are requested to apply their inventive ability in the various mechanical operations. Through trade unions and shop committees they have a large share in the determination of wages and conditions of labor. By the introduction of the sliding scale and piece work they share in the general prosperity of the concern. This gives them management. Thus industrial democracy is being gradually developed."

WHEN WINTER COMES.

The ending of the busy season this year and the coming of winter finds some unusual conditions in the clayworking industry. The first and most important of these is that instead of the demand slowing down and the trade accumulating a surplus as winter comes on it is exactly the reverse. The demand in many localities has been in excess of the supply, especially of common building brick, and the scarcity of coal and slow transportation has delayed the filling of orders with the result that as we approach the winter season most of the brick plants are crowded with orders and will be rushed with the work of production right up to cold weather.

Now, it will be interesting to note just what effect this will have on the usual winter routine in the clayworking fraternity. The first thought which suggests itself is that the result will be more than the usual amount of additions and plant extensions during the winter, especially since all the signs indicate a contribution of the active demand in another year or two. This would mean a busy time for the machinery and equipment people.

Opportunity for Plant Additions and Improvements.

There is not much doubt either but what the winter will be a good one for the machinery people, and will furnish unusual activities in the way of plant additions and improvements, but it is still an open question of how much of this will or should be in the way of capacity enlargements. The wisdom of increasing capacity is a matter that is affected largely by local surroundings. We may say in a broad way that the consumption of brick and hollow building tile should increase steadily during the next ten years, consequently there should be an increase in producing capacity to take care of the growing needs. So far so good. But it so happens that in many instances in a given locality there is already more local production than there is local consumption, and to materially increase capacity in these localities would not result in the same benefit as to increase capacity or equipment and put plants in some locality where the future requirements plainly exceed the present rate of production. Freight as we know enters as quite a factor in the distribution of brick and hollow building tile, and this brings in the question of to what

extent it is good sense and economy to enlarge a central plant and ship out into the surrounding territory because of the greater efficiency of the larger units, or when it is better to change the practice and build a new plant near the point of consumption where brick and hollow building tile will plainly be needed in the future. These are important side questions which enter in the general question of plant enlargement and they should be studied thoughtfully.

Better Quality at Lower Cost.

Another thought which stands out prominently as winter approaches in that much attention in the way of changes and additions may and should properly be centered upon plant improvement so as to attain better quality of product at lower cost. The shortage and high price of coal has emphasized the importance of fuel economy, and the high cost of labor makes equally important the use of power appliances and methods which will reduce to a maximum the amount of labor involved in producing and shipping brick and hollow building tile.

Continuous Operation Necessary.

Meantime let us not overlook the fact that most plants will be kept busy far into the winter taking care of the current needs, and if the signs read right this will be a winter of unusual activity in clay plant operations and there will be much more than the usual percentage of winter running. This will help toward putting the industry on an all the year basis, which is good and makes for economy. So perhaps the first thought will be to see how much winter work can be done, that is how nearly it will be practical to keep running all through the winter. Along with this of course should go plans for improving the plant layout and making additions where circumstances seem to justify plant enlargement.

It looks like it is going to be a busy winter both for the clayworkers and for the machinery and equipment people who supply them.

A LITTLE NONSENSE NOW AND THEN.

Thirsty days hath September, April, June and November. All the rest are thirsty, too—unless you make your own home brew.—Life.

Suggesting a Slogan.

Aiken—I see the drys lost their fight in the Scandinavian peninsula.

Payne—Maybe they'll win in the Swede bye and bye.

—Youngstown Telegram.

That Was Easy.

Professor—What is ordinarily used as a conductor of electricity?

Senior—Why 'er.

Professor—Correct. Now tell me, what is the unit of electric power?

Senior—The what, sir?

Professor—That will do; very good.—M. D.

Simplified Spelling.

Little Louis had gone to the kitchen to observe old Aunt Sarah, the colored cook, at work making biscuits. After he had sampled one, he observed:

"Aunt Sarah, I can spell now. These are made out of d-o, do."

"But that doesn't spell dough," Louis's mother corrected,

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as she entered the kitchen to give the cook some orders.

Whereupon, Aunt Sarah thought that she, too, would enter the discussion. So she said:

"Dere's two kinds of do, chile. "'Do,' what you shuts, an' 'do,' what you eats."—Philadelphia Public Ledger.

Would You Believe It?

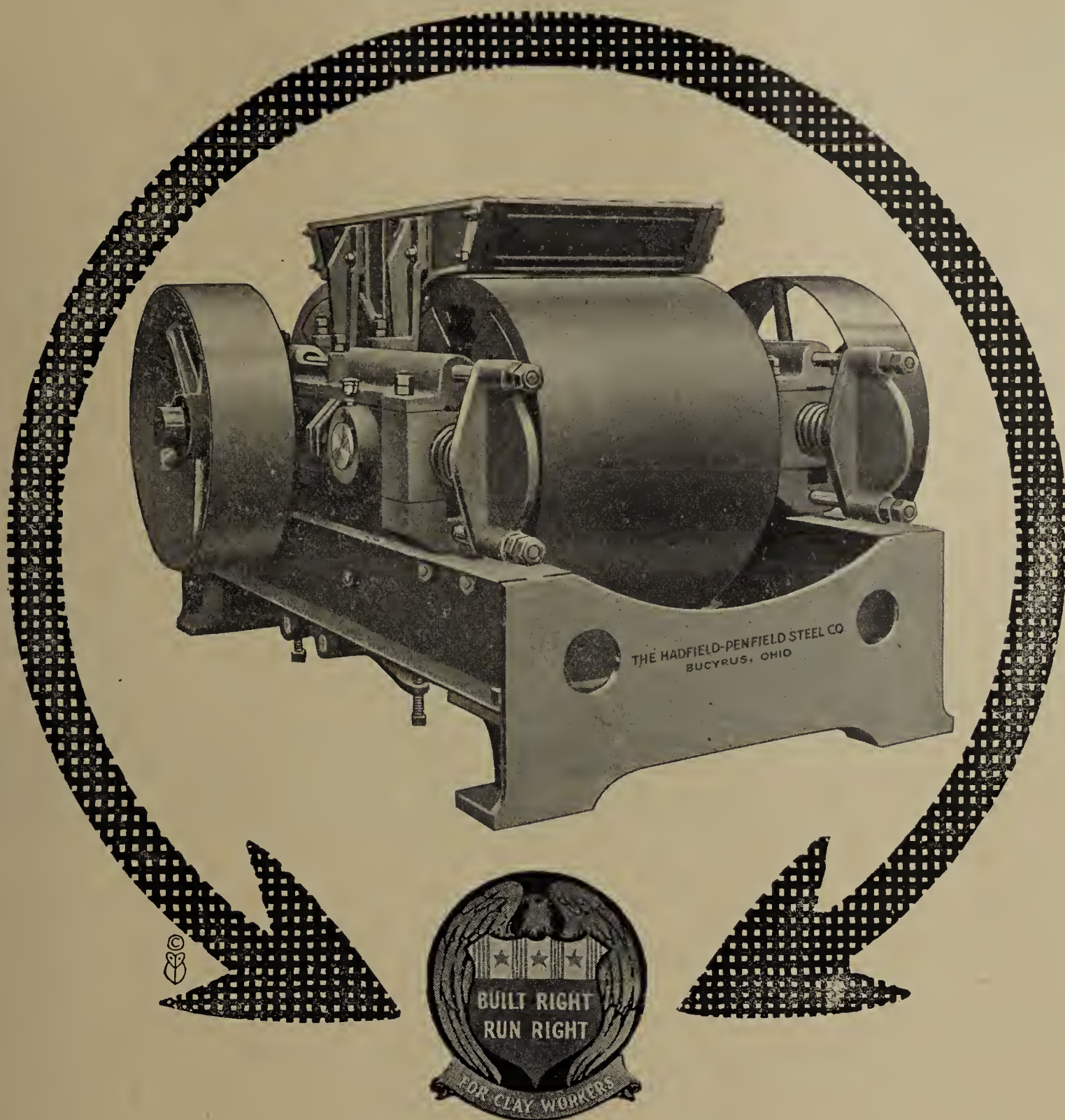
This advertisement recently appeared in a western newspaper:

"Wanted—A man to undertake the sale of a new patent medicine. The advertiser guarantees that it will be profitable to the undertaker."

Any Hotel.

First Guest—"I'm sure I don't know why they call this hotel 'The Palms,' do you? I've never seen a palm anywhere near the place."

Second Guest—"You'll see them before you go. It's a pleasant little surprise the waiters keep for the guests on the last day of their stay."—St. Louis Star.

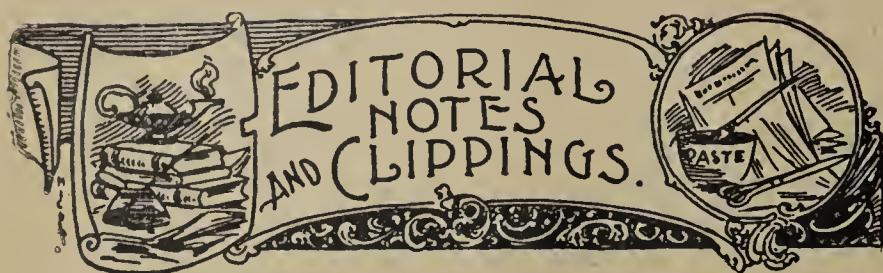


AMERICAN NO. 266--A CRUSHER.

A glance at the cut will indicate to the discerning and careful buyer that here is a crusher of more than ordinary quality. It is built to serve and it does it, not only in the quantity and quality of the material coming from it, but also in lowering the cost of operation and lessening, repair troubles. This Crusher was designed for grinding plastic clay which carries too much moisture to permit dry grinding and screening. It is substantially built in every detail and is designed for long and hard service as well as large capacity. Get Bulletin No. 266 which gives a complete description of this great Crusher.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio

Formerly The American Clay Machinery Co.



It has been announced that Charles Morris will erect a brick plant near Hoidenville, Okla.

The Kimball-Wheeler Brick Company, Chicago, is now known as the Burt T. Wheeler Brick Company.

Reynolds Bros. of McRae, Ark., are organizing a company which will later establish a brick plant near McRae, Ark.

The C. L. Sanford Brick Company, Southold, Suffolk County, Virginia, has been incorporated by C. L., L. N. and F. S. Sanford, with capital of \$60,000.

Geo. C. Sheehan of Asheville, N. C., has obtained a 100 acre tract of clay land near Fletcher, N. C., and contemplates the erection of a \$50,000 brick and clay products plant.

The Northwestern Pottery Company of Norwood Park, Chicago, has been capitalized at \$100,000. The incorporators are Richard C. Mazer, Edward C. Blanks, Albert W. Bockhem.

The Colonial Brick Company of Clifford, Pa., has been incorporated with \$100,000 capital. It was organized by Orman A. Ketcham, Bloomfield, and Frank J. Bell, Chestnut Hill, Pa.

Large deposits of kaolin have been discovered south of Williams Lake in the Cariboo district of British Columbia, which may form the basis of a great new china and crockery industry in western Canada.

The Illinois China Company, Lincoln, Illinois, whose plant was destroyed by fire several months ago, is building another plant larger than the old one. The new plant will have a floor space covering approximately two acres.

The Williamstown Pottery Co., Williamstown, W. Va., has been incorporated, capital \$25,000. The incorporators are John D. Sweeney, Leslie W. Lump, Benj. H. Govell, Jones M. Pyatt, Rowe B. Bunner, Geo. Bills, Jr., and John W. Wells.

The Open-Hearth Fire Brick Co., Wilmington, Del., has been incorporated with a capital stock of \$500,000 to manufacture fire brick and other refractories. H. O. Williams, 1407 Keenan Bldg., Pittsburgh, is the corporate representative.

We are advised by J. R. Williams of Fort Smith, Ark., that parties there are contemplating erecting a small plant for the manufacture of hollow building tile and desire information relative to machinery and equipment needed for the enterprise.

The Ashville Fireproofing Company, a newly incorporated company for the manufacture of tile, hollow block, paving and building brick, will erect a plant at Bell's Landing, three miles north of Circleville, Ohio. The concern is capitalized at \$30,000. The directors and incorporators are Edwin

Newton, B. M. Newton, John Dum, W. C. Northstine and Howard Hedges.

The Santa Monica Brick Company, Los Angeles, has been incorporated with capital stock of \$100,000.

Jay G. Reading of Mattoon, Ill., is contemplating erecting a plant for the manufacture of drain tile near Mattoon.

We are informed that the Falls City Hydraulic Brick Company, Jeffersonville, Ind., is planning the installation of new machinery. Robt. Akers is superintendent in charge.

The Consolidated Brick Company, Melrose, Mass., has been incorporated with a capital stock of \$98,000. The incorporators are George L. Baldwin and Kathryn Danford of Worcester and James E. Fraser of Melrose.

The McDonald Brick Company has been incorporated at Ludowici, Ga., by C. J. McDonald and J. L. McDonald with a capital stock of \$50,000. The company will manufacture brick, roofing and tile.

The Kincaid brick plant at Rosehill, Va., was recently purchased by J. M. McLemore, J. M. Johnson and N. J. Weller. It was renamed the Rosehill Brick Company, which is capitalized at \$50,000 with Mr. McLemore president, Mr. Johnson vice-president and Mr. Weller secretary-treasurer.

According to E. D. Mattes, manager of the Decatur Brick Manufacturing Company of Decatur, Ill., the company will operate their plant almost continuously during the winter, due to the unusual demand for their brick at this time and the large number of orders on hand and the need for stocking the yard for spring trade.

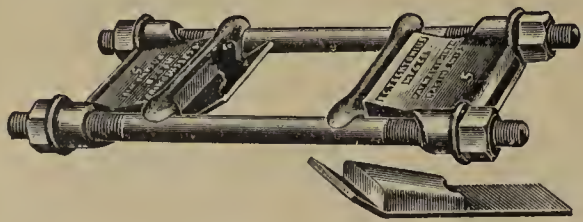
The Tiernan Brick Company of Macomb, Ill., was recently incorporated. We are informed that the demand for their brick is more than double their present output even though their capacity has been increased recently with the installation of new equipment. Their entire output at present is being contracted for by Chicago firms.

The Ceramic Products Corporation of Old Bridge, N. J., has been incorporated with a capital stock of \$200,000 with 1,000 shares of common and 1,000 of preferred stock, the latter paying eight per cent. dividends. The incorporators are Gerald L. McLaughlin of Newark, T. Bryant Smith of Long Branch and Conover English of Elizabeth.

Joseph Vet of Mechanicsville, N. Y., recently purchased 180 acres of clay land north of the Boston & Maine railroad bridge, just across the river from Mechanicsville, and the Mohawk Brick Company, of which Mr. Vet is president, will build a new brick plant there, and with their plant at Crescent will have a combined capacity of 100,000 brick per day. William Dempsey of Mechanicsville is superintendent.

The Acme Brick Company with offices in Danville, Ill., and a large brick plant at Cayuga, Ind., has filled many orders during the last few weeks for their popular Vine Wove face brick. The plant is still running to capacity. A recent shipment of 270,000 of their Vine Wove buff brick was sent to Duluth, Minn. This shipment was for two large apartment buildings. Another order of 60,000 of the same brick was shipped recently to St. Paul, Minn. Several large orders for packing house tile used in providing a wearing surface in big packing houses and other industrial plants have also

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction

Insures Safety to Kiln Contents

Wrought Iron Bands

Crown Covers and Ventilators

Write for

Discount and Net Prices

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U. S. A.

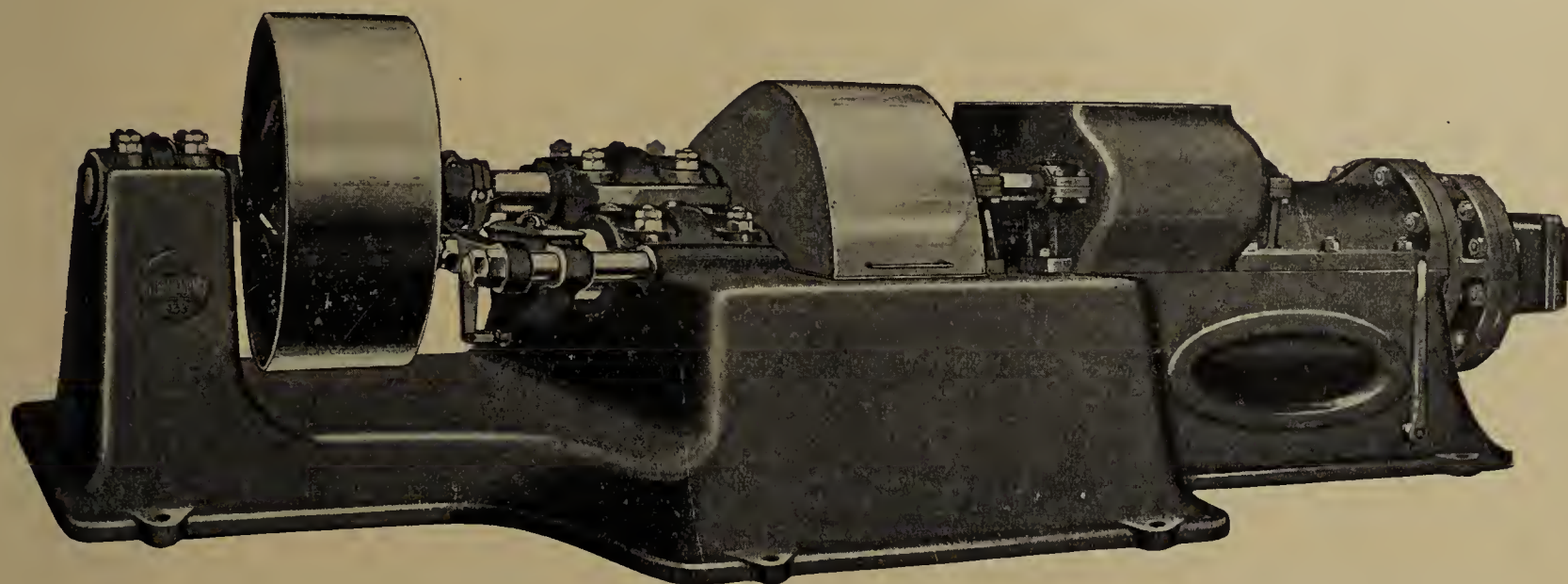
Up and Down Draft
Tecktonius—Vogt
Round Kiln



425 - 435 - 445

AUGER MACHINES

PATENTED



Superier Press Brick Co.

St. Louis, Mo. and

The Federal Clay Products Co.

Mineral City, Ohio

Have just installed 445

Auger Machines.

Complete International Equipment

Ask for Bulletin 30.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

New York

Toronto, Ont., Can.

Pittsburgh, Pa.

EDITORIAL NOTES AND CLIPPINGS.

been shipped out from the Cayuga plant during the last few weeks.

Fire of unknown origin badly damaged the main plant of the Paxton Brick Works, Paxtonville, Pa., the latter part of September.

A. R. Soames of Vincennes, Ind., is in the market for second-hand tile machinery. He contemplates going into the drain tile business and would like to get in touch with anyone having good second-hand tile machinery for sale.

New equipment is being installed and new buildings erected on the old brick company's site at Rudyard, Mich., by Thornton Bros., pioneers in the brickmaking industry in that section. The work of enlarging the plant will be carried on next spring when the installation of a plant for the manufacture of tile is planned.

Roy Allen, manager of the Montrose Brick & Tile Co., and Grand Junction Company, Colorado, states that both plants have produced better than two million brick this year, which will not near cover the orders they have on file. The demand for drain tile is small, although there is a large amount of land in that vicinity which needs drainage.

The Dayton Brick Company, of Dayton, Ohio, was incorporated with capital of \$200,000, by Lincoln J. Davis and John M. Mulford. A site has been obtained in the city of Dayton near the Big Four tracks, for the new plant. It is planned to make 50,000 common bricks and 16,000 face bricks each working day. John M. Mulford is Dayton manager of the Equitable Life Assurance Society of New York, and is one of the incorporators of the above named company.

The Noll Brick and Tile Company of Wichita, Kans., began operation the latter part of September and will soon install a second brickmaking machine which will bring the total manufacturing capacity to 85,000 brick daily. The first brick manufactured are being used in the erection of kilns. The brick are made from a shale found six miles from the city of Wichita, a quarter of a mile from North Lawrence avenue, where the plant is located. The officers of the company are C. A. Wall, president; F. R. Covert, vice-president; W. R. Covert, treasurer, and Ollie Constant, secretary.

The Thurber Brick Company, Thurber, Tex., manufacturers of Vertical Fibre paving and building brick, are giving their entire attention at this time to the manufacture of the Vertical Fibre paving brick, both the 3 inch and 2½ inch size (requiring about 35 brick to the square yard of pavement). In the very near future they will manufacture the Fisk lock brick, machinery for which will soon be installed. The company at the present time is furnishing brick for a road in Eastland County, Texas, which is twenty-one miles long. The brick are being laid on a water-bound macadam base, 10 inches rolled down to 8 inches with a 1 ft. asphaltic concrete shoulder on each side. The entire width of the road is 19 ft. Their 3 inch vertical fibre paving brick are selling around \$28 per thousand f. o. b. cars at plant, and the 2½ inch brick at \$26 per thousand f. o. b. cars at plant.

The Burton-Townsend Company of Zanesville, O., has resumed operations. A sufficient supply of coal has been procured to ensure the operation of the plant at full capacity for several months.

The Cleveland Builders Supply and Brick Company celebrated the thirtieth anniversary of its founding with an outing and dinner at the Cleveland Yacht Club the latter part of September. Over 200 employees, officers and directors attended.

A 20 per cent increase in wages effective immediately has been announced by the Central Refractories Brick Company at New Lexington, Ohio. The Hocking Fire Clay Company at Nelsenville announced a 16½ per cent increase at the same time.

The old Alhambra Brick Yard, located at Alhambra, Ariz., has been taken over by the Maricopa Brick Company, which is now operating the plant manufacturing common building brick, ruffle, tapestry and rug faced brick in a variety of colors, partition tile and hollow building brick. The proprietors are T. L. Myers and Frank Ancici.

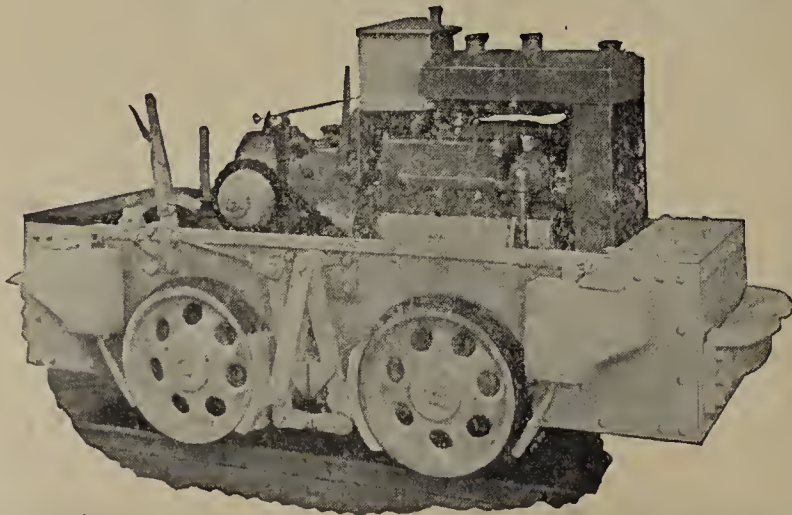
Geo. Forrester, age 63, tile manufacturer and resident of Grand Rapids, Mich., died suddenly the afternoon of September 25th after an attack of apoplexy. He had been a resident of Grand Rapids for over thirty-five years and had been very prominent in local contracting circles. He was active in civic affairs and was at one time postmaster of East Grand Rapids.

The McCook Brick Company of McCook, Neb., is very anxious to secure a full line of face brick to handle as jobbers in their territory and has requested us to advise the face brick manufacturers who desire placing a large quantity of their brick in southwestern Nebraska, northwestern Kansas and northeastern Colorado, to get in touch with them. The McCook Brick Company make common brick and tile and but recently made the first building tile ever manufactured in western Nebraska.

The Herty Turpentine Cup Company is rebuilding one of its plants at Daisy, Tenn., preparatory to operating both at full capacity. The new unit of the plant has been operating practically all the time during the depression in the turpentine market but has been making brick, drain tile and building tile. The old unit, which is now being rebuilt, was erected more than 25 years ago. The rebuilt plant will have a capacity of something like 50,000 clay turpentine cups daily, according to J. C. Candler, manager of the plants. About 200 men are employed by the company when operating to full capacity.

The Risher Fire Brick Company, an Illinois corporation, has established offices and warehouse facilities at 18th and Canal streets, Chicago, Ill. The company will carry an unusually complete stock of high grade refractories. Special attention will be given to stocking special shapes. Mr. H. E. Risher, the president and treasurer, is well known in fire brick circles and has at his disposal an extensive knowledge gained in over nineteen years' study of fire brick and their correct application. Every facility has been provided for rendering quick and intelligent service to local and out of town points.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

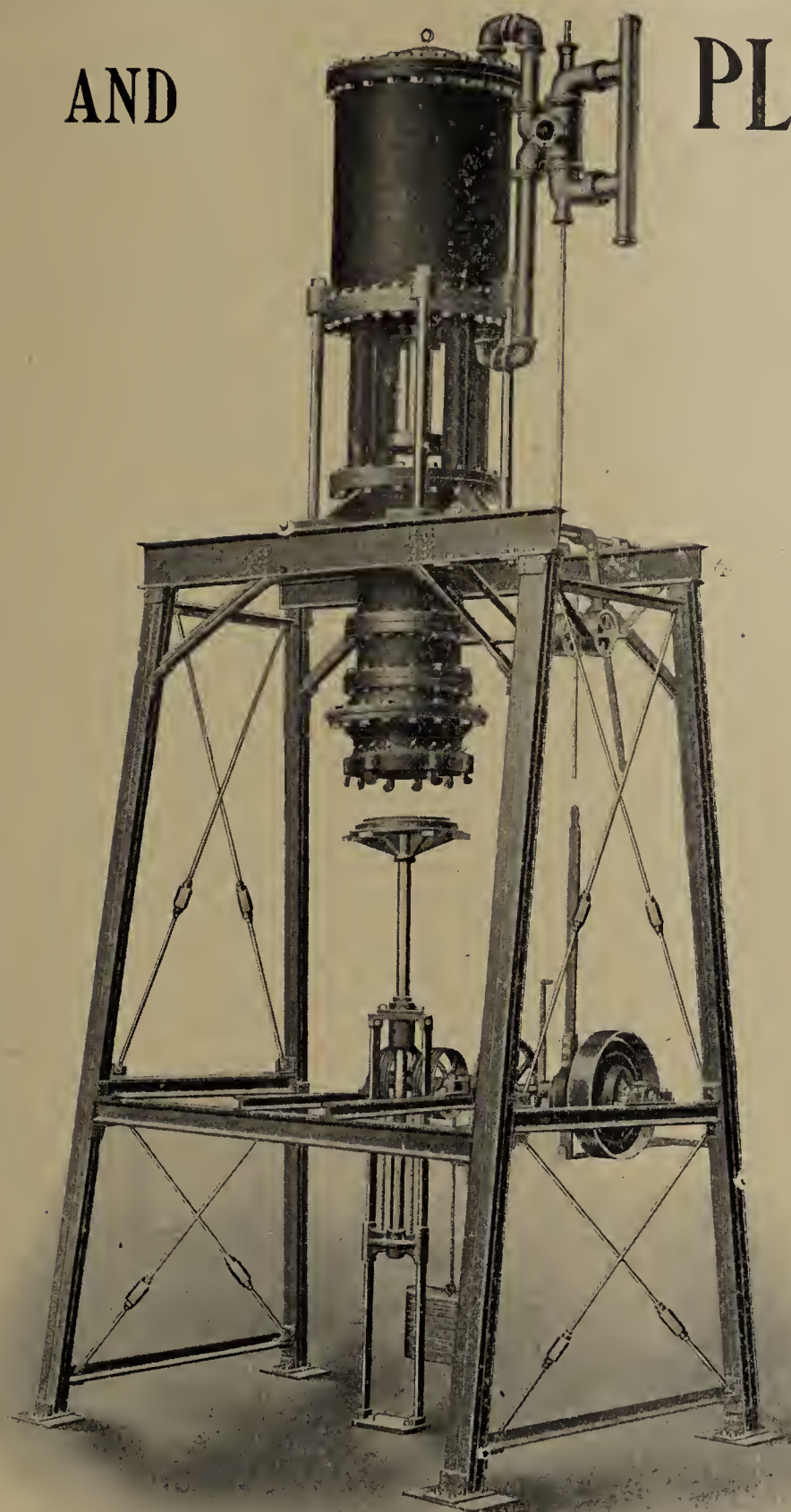
CLEVELAND, OHIO

SPEED AND

PLENTY of it.

MODELS
—
**42 & 44 inch
PRESSES**

**SEWER PIPE
&
TILE.**



“OUR PRODUCTION RECORDS WILL INTEREST YOU”

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
801 Monadnock Bldg.
Chicago, Ill.

Written for THE CLAY-WORKER.

THE NEW YORK SITUATION.



DECIDED QUICKENING of commercial and industrial construction is to be noted in various sections. This can be traced almost directly to the rising prices as seen in the basic building material markets. This construction movement is quite noticeable and is causing more than passing comment.

Some speculation has been rife in the past as to the next type of building construction that will be foremost in the field. Most are of the opinion that the loft building type will be the leading factor. Light manufacturing locations are scarce, and this class of manufacture will have to be cared for. Quite a few investors are assuring possible tenants of an uninterrupted supply of steam, and this may come in a large measure by the use of fuel oil. Undoubtedly this type of heating appliance will be used in the future. This method of firing is almost sure to help in the solution of the all-important factor of heating.

There has been some talk about the scarcity of certain types of skilled labor. This, in itself, would help to cause loft building to come to the fore as in this type of building so many classes of finishing artisans are not needed.

An extended study has been made of the outlook of winter constructional activity in this center, and the above is a brief synopsis of their findings. From these it can be deduced that the whole section is headed for a general expansion in all lines of endeavor, the more marked being the line of constructional activity.

This section is showing the same tendencies as other sections. That is, the approach of fall and winter building with little or no reserve in anywhere near the proportion required, and as called for in tentative estimates. Reports reaching here at this time show an increase of one hundred per cent over totals given out at this time in other years. There is a slight tendency in habitational building, both on the large and small scale, to hold off in hope of a lower range of prices in building material and labor rates. The former may slide back a little—a dollar or two—but there is a little optimism regarding the latter. However, this is a question that is hard to settle on paper.

The basic materials—that is, brick and hollow tile—have shown a tendency to remain stiff to a greater or lesser extent since the first half of the year. How long this will keep up is problematical. These records have taken to skyrocketing and then a decidedly falling back, all within a short time.

This has been due to a scarcity of material, and in one or two instances, to labor troubles. When these difficulties become disentangled, everything will return to normal and remain so for quite a period. The shortage of cars for shipment is a factor all manufacturers in this section are very much concerned about at the present time.

There seems to be a general turning over of delivery schedules with more or less difficulty in obtaining raw materials. While these troubles exist, producers are not greatly concerned in obtaining a large volume of business. What seems to be uppermost in their minds is the execution of the old contracts. These were taken at figures far below present ones, and they therefore feel they are on the wrong side of the fence.

At the present time there is a great deal of good business being offered, and much being taken, but in a different way than has been the custom; prices are being based on market prices at time of delivery. This has a tendency to hold prices up, and in fact, it is felt by some that there is but a slight chance of a falling back until well in the middle of next year.

Producers are stocking up on material they have run out of. Some are running in an effort to get reserve ahead, but the time is approaching for the seasonal yards to shut down. Some may run well into the winter, while others, possessing the necessary equipment, may endeavor to run all winter to meet some of the contemplated winter construction. Up-river yards are in operation, and will probably run until the water route is blocked with ice. Even then, there is a possible chance that some will operate and ship by rail, or, if possible, by truck.

Common brick is quoted on the market at its former level, about \$18.00 per thousand. The price shows a stiffening, but this is to be looked for at times. The demand is fair, with a slight barometric action due to causes beyond sellers' control. Face brick are in demand where habitational operations are in progress, with prices remaining in the main the same. Shipment by rail is hard, as the present car-shortage is tying up matters in a way at times to cause some concern.

The United States Corporation, 65 Cedar St., New York City, is representing a newly organized company which will be known as the New York Vitreous Enamel Products Co., New York, and will manufacture vitreous enamel ware, ceramic and allied products.

Mr. H. Chertkoff, of 66 Bay 35th St., Brooklyn, N. Y., is the attorney for a newly organized company to make art tile. This company is incorporated for \$50,000 by D. and H. Markler and R. Pedevillano.



INVINCIBLE BRICK BARROWS

If you have used them you know that they are the best. If you have not used them it will pay you to give them a trial.

Write for price.

Toronto Foundry & Machine Co.
Toronto, Ohio

Burning Clay Products is the **Most Important Problem** of all in the **Industry**. If the **Ware** is not **well burned** it has no **commercial value**. Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U.S.A.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use
of power and labor.

Cuts out the Powder Bill and danger
from the use of Explosives.

But best of all, it secures a perfect
mixture of the clay stratas, and you all
know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and
write us

EAGLE IRON WORKS

Builders
Des Moines, Iowa

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

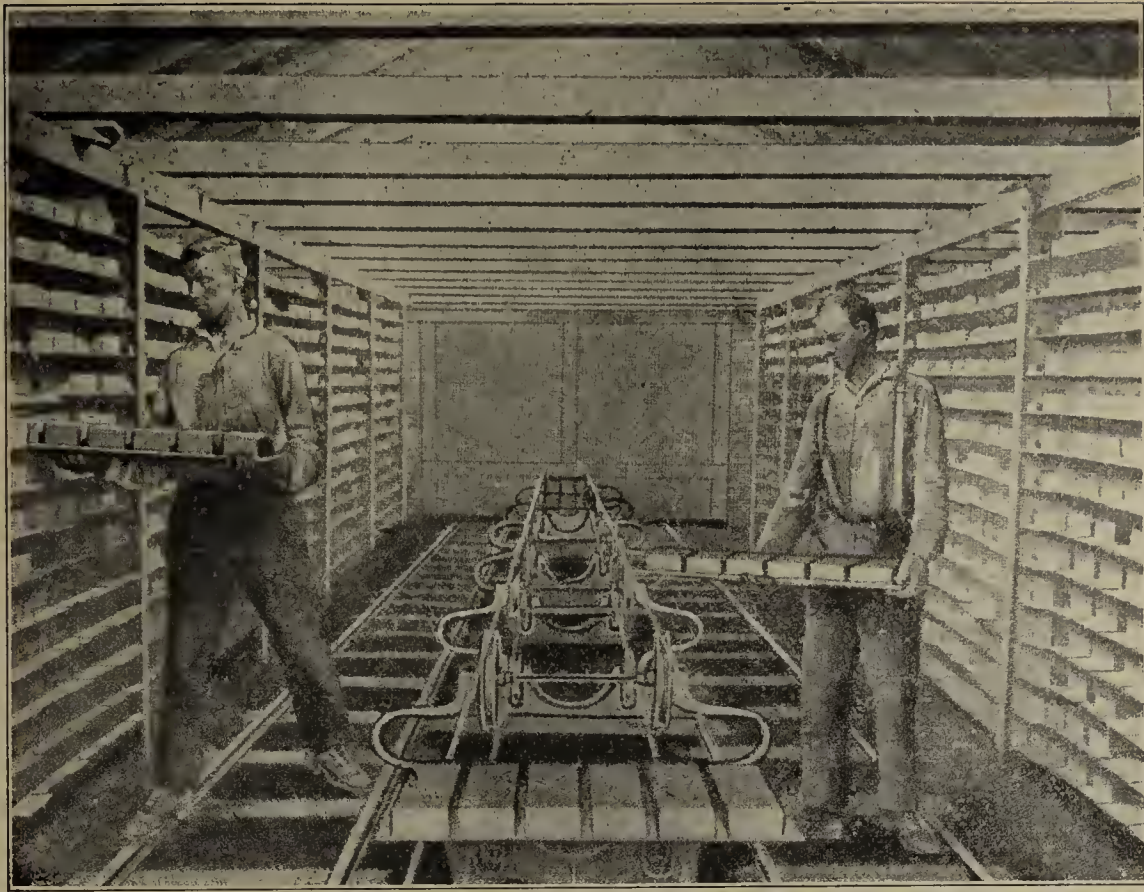
In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.



CHECK OFF ANOTHER DAY—AND HOPE FOR SUNSHINE TOMORROW

That is an expensive and annoying way to manufacture brick, but the man who is at the mercy of the weather must do it that way.

A Martin Steam Pipe Rack Dryer makes you independent of the weather. Rain or shine, it is on the job — drying brick better, harder than the sun ever did. One bad shower season can cost you the price of a dryer in spoiled brick and delayed production — but the Martin Steam Pipe Rack Dryer is a money maker in other ways too.

It keeps the plant on an even schedule. It does not mind Winter any more than it minds rain. It makes your brick better and, therefore, easier to sell, and it operates on **exhaust steam** — heat correctly applied at the proper temperature at practically no cost.

No waste, no delay, where there is a Martin Steam Pipe Rack Dryer. You need one for your plant if you intend to make your plant at efficient paying business. Write today for details.

Lancaster Iron Works, Inc.

Lancaster, Pennsylvania, U. S. A.

Brick Machinery Dept. James T. Martin, Manager

Specialists in Completely Equipping Building Brick and Fire Brick
Plants for the Manufacture of Brick by the Soft Mud Process.

AutoBrik Machine

Let us tell you what experienced brick men say about the AutoBrik Machine and let us send you our interesting illustrated catalog.

Mention THE CLAY-WORKER.



What's "Under the Hood" of Brown Pyrometers

(2nd of a series)

23 Special Machine Tools to make this Diminutive Bracket

and each cuts to an accuracy of $1/1000''$

TO pick it up you'd think it was perhaps made by a master die maker for some very important experimental apparatus. To fit it down over the guide pins that holds it in place, you'd be sure it was.

It is a very fine example of brass die casting, and one of the most difficult ever made. Almost every one of its intricate surfaces and nearly all the holes must be machined to an accuracy of $1/1000''$, for it carries a movable element as sensitive as "the breath of life" itself. It must keep that element *exactly* centred between the powerful magnet pole-pieces and the soft iron core which are both ground to $1/1000''$ accuracy.

It is a fair sample of Brown methods all the way through—methods that have produced a pyrometer so advanced, electrically, and so superior in accuracy and durability that there are as many of them in use in America as all other makes combined.

The Brown Instrument Company

Wayne Junction, Philadelphia, Pa., U. S. A.

New York
St. Louis

Pittsburgh
Denver

Cleveland
Los Angeles

Detroit
San Francisco

Chicago
Montreal

Brown Pyrometers

Most used in the world

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Boss Ten-Hour Dryer



Will dry your daily output in TEN HOURS with either WASTE HEAT or EXHAUST STEAM.
Less cost to build—Less cost to operate.

Boss System of Burning

Brick or hollow ware burned in ONE-HALF LESS TIME and ONE-HALF LESS FUEL. Increases your kiln capacity. Dryers and kilns designed and built. Let us solve your drying and burning problems.



J. C. Boss Engineering Co.
Elkhart, Indiana



YOU HAVE KNOWN FOR YEARS THAT

RICKETSON'S MORTAR COLORS

are pure and brilliant in tone, economical in application, absolutely reliable, and a permanent guarantee against fading and washing.

Why Not Insist on Having Them?

They are the acknowledged best for all uses---Mortar, Brick, Cement, Concrete and Stone.
Red, Brown, Buff, Chocolate and Black

RICKETSON MINERAL PAINT WORKS

MILWAUKEE, WIS.

CARS CASTINGS DIES

In our Foundries and Machine Shops we are prepared to furnish Dryer Cars, Clayworkers' castings and Dies of all kinds for sewer pipe press and machines, Etc. Write for Prices

Wm. E. Dee Co. 30 N. LaSalle St.
Chicago, Ill.

Over 60,000 In Use

Oil Burners For All Types of Kilns



Perfected to
The Minute

HEAT TELLS!

Write us today

"Be Sure It's Schurs"

SCHURS OIL BURNER CO.

Established 1905
Los Angeles, Cal., U. S. A.

Classified Advertisements

FOR SALE, WANTED, ETC.

Advertising rates in this column 35 cents a line, or 6 cents a word each insertion; about six words make a line. Cash should accompany the advertisement to insure insertion. No ad inserted for less than \$1.00.

WANTED, ETC.

WANTED.

30,000 wooden pallets suitable for use in open air drying racks. Give size and full description.

EXCELSIOR BRICK CO.,
10—3d. Menomonie, Wis.

WANTED.

Two experienced burners for vitrified brick plant using gas for fuel. State experience and give reference.

Address XYZ,
Care Clay-Worker.
101d

WANTED.

Position as manager or superintendent of high grade face brick, rough texture, common or fire brick plant. Been in charge of large and modern plants. Best of references. Address,

L. M. D.,
care Clay-Worker.
83 cm

WANTED.

To purchase plant capable of making high grade rough texture face brick, located in Central Freight Association territory. Mention extent of shale owned by plant. Address,

RED FACE BRICK,
care The Clay-Worker.
91d

WANTED.

By New York Sales Representative. Representative covering New York and adjacent territory open to represent manufacturer hollow tile, sewer pipe and other clay products. Commission basis. Address,

REPRESENTATIVE,
care Clay-Worker.
91 cm

WANTED.

Triple deck tile dryer cars, 24-in. gauge. 16-pound T rails.

Two 24-in. gauge turn tables, single track.

One 30-in. gauge turn table, single track.

Tile and brick cutter.

D'HANIS BRICK & TILE CO.,
93 c D'Hanis, Texas.

WANTED.

A first-class superintendent for a hollow ware plant, near a large city. Must understand adjustment of dies on auger machines as well as drying and burning. State in first letter experience, name of plants employed, kind of ware and salary expected. Only practical men need apply. Must have references. Address,
D. C.,
92 d care The Clay-Worker.

FOR SALE

BUSINESS OPPORTUNITY.

Man or men to complete financing brick, tile and hollow ware proposition. 178 acres in Mercer county, Pa. Authorized capital, \$100,000. Stock sold, \$20,000. Excellent shipping facilities.

Address E. C. BOYD, Treas.,
Orangeville Savings Bank Co.,
92 dm Orangeville, Ohio.

FOR SALE.

Two horizontal tubular boilers; one 150-h.p. engine; one 4-h.p. vertical engine; one 8-ft. fan with 8x12-in. direct connect engine and 10,000 feet radiation; dryer equipment; one No. 25 Brewer brick machine; one pug mill; one disintegrator; one brick cutter, and other machinery.

Reason for sale—discontinuing brick manufacturing.

THE MAMER CO.,
83 cm Benton Harbor, Mich.

FOR SALE.

One Plymouth 3 ton gasoline locomotive, in excellent condition. Two American 9 ft. dry pans. Two new steel leg bucket elevators for same. One 70 K. W., 250 Volt D. C. generator. One new 40 H. P. A. C. motor. Three pit cars. One new 20 K. W. 125 Volt D. C. generator. 100 ft. heavy line shafting with all fittings.

BRADFORD BRICK & TILE CO.,
2 Main St.
8 tf d Bradford, Pa.

FOR SALE.

American No. 11 Open Top Pug Mill—Style "P," forged steel main shaft. Single geared, extra heavy. 48 inch friction clutch pulley, 12 inch face. Can prepare clay for 10,000 brick per hour. Tub is 12 feet long. Weight with friction clutch 12,000 pounds. This machine was used, but never installed at our plant, and we have no need of it.

MANCHESTER SHALE BRICK CO.,
102c Harrisburg, Pa.

PATENT FOR SALE.

Interlocking block for walls, partitions, floor arches, walks and pavements. Cheap manufacture. Easy selling.

H. S. WHEELER, M. E.,
226 Tacoma Building,
101cm. Tacoma, Wash.

FOR SALE.

A tract of clay convenient to a growing city of 175,000. Local yards cannot supply the demand, it will pay you to investigate.

Address Land,
10-1d Care Clay-Worker.

FOR SALE.

Several letters patent on air cell bricks or load bearing facing tile. For particulars write to,

JAMES P. WILLIAMS, Consult. Engr.,
Kings Highway at Maffit Ave.,
7 tf d St. Louis, Mo.

FOR SALE.

One 20 ton saddle tank Porter locomotive, 30-inch gauge; 6,000 feet 50-lb. rail and splices; 10 wooden one side dump cars, 30-inch gauge.

JOHN H. FRITZINGER,
215 Rector St.,
92 d Perth Amboy, N. J.

FOR SALE.

New Tile and Brick Plant in Northern Michigan, recently built, with modern machinery. fine clay bed. Good demand in large unoccupied territory. Water and rail shipments. Address

WM. CHILDS, Secretary,
83 cm Cheboygan, Mich.

FOR SALE.

An up-to-date brick and tile plant, equipped with boiler and engine, belting and mill. Everything necessary except dryer and kilns. Good houses, garage, office and sidetracks. Abundance of shale and clay on the ground. Good drainage. Also coal that can be placed at the plant at less than \$3.00 per ton. Our location is admirable, with splendid shipping facilities to Indianapolis, Cincinnati, St. Louis, Chicago and intermediate points. If not disposed of entire, will sell machinery separate, all of which is new, and modern. Never been used, of J. D. Fate make. Address,

BARGAIN,
8 fd Care The Clay-Worker.

Classified Advertisements.

FOR SALE.

Wire side cut brick plant in operation, modern equipment. Excellent opportunity. Sacrifice price for quick sale.

FINIGAN & MOAK,

10 1 1 p Mechanicsville, N. Y.

WANTED.

Fire brick superintendent for plant with well established product and trade; a man who now has a good job but wants to advance; a man who does not answer every ad. he sees. We offer a permanent position at a good salary. Address

WELLS,

10 1 d Care The Clay-Worker.

WANTED

We are in the market for a 4-mold Berg or Boyd Dry Press, second hand, in first class working condition.

Please name price and earliest possible delivery.

In quoting, please advise shipping point, age of machine, whether new or old style type, and list extra dies and press boxes, if they cover more than the regular 9-in. brick.

If you can include press boxes to make Arch, Wedge and Key Brick, please advise with complete list.

Also advise where this machine can be inspected.

ELK FIRE BRICK CO.,

10 1 d St. Marys, Pa.

LOCATE YOUR PLANT AT FROSTBURG TO SELL THE EASTERN MARKETS

Frostburg, Maryland, due to its location, has an advantage over all Ohio cities of from \$2 to \$4 per ton on brick, sewer pipe, tile and other clay products to big eastern markets between Boston and Richmond. It has the same, or better, freight rates than are in effect from Western Pennsylvania brick centers.

The Supervising Ceramist of the Bureau of Mines declares the clays found in abundance at Frostburg are admirably adapted for the manufacture of face brick in buff gray and other shades, sewer pipe, building and drain tile, architectural terra cotta and other clay products. The district is served by three trunk lines, Baltimore & Ohio, Western Maryland and Pennsylvania. All inquiries held strictly confidential. Full information furnished by

THE FROSTBURG COMMERCIAL

CLUB,

10 1 dm

Frostburg, Md.

FOR SALE.

One second-hand pan mill manufactured by C. W. Raymond Co. Pan 16 inches deep. Mill in good working condition. Blue prints can be supplied on request.

THE CARBORUNDUM CO.,

10 2 d

Niagara Falls, N. Y.

FOR SALE.

Nine-kiln plant making highest grade salt glazed hollow building tile, drain tile and face brick. Plenty of clay. Best sales location. Property and price too good to remain on the market long.

HAWKEYE CLAY WORKS,

8 1 cm

Fort Dodge, Iowa.

If...

You Want to Sell or Buy...

Second-hand Clayworking Machinery, Tile Mills, or anything pertaining thereto.

If...

You

Want a Man

for any position or a position in any connection with the Clayworking Trades use the

For Sale and Want Columns of...

The...

Clay-Worker

RATES

TRUSTEE'S SALE

of a completely equipped fire clay mine with steel tippie, steam boiler, dry pan, crusher, electrical transformer, all nearly new and modern, arranged to accommodate a fire brick plant at small additional expense.

Mine located on Chicago & Alton Railroad, one-half mile east of Farber, Mo., in heart of finest fire clay deposit in U. S. Ample trackage facilities already in for further development. Shipments take river rate. Sale will be held at East Door of Court House, Mexico, Mo., OCTOBER 21ST, 1922.

For further particulars address George Coakley, Trustee, or North Missouri Trust Co., Mexico, Mo.

10 1 cm



The Parker-Russell Mining and Manufacturing Co. ST. LOUIS, U. S. A.

Fire Clay and Silica Products of Quality for Service--- Especially for Kiln Construction.



FOREIGN COMMERCE HAND BOOK.

THE FOREIGN Commerce Department of the Chamber of Commerce of the United States has issued a Foreign Commerce Hand Book to furnish useful information and sources of information for those who are interested in the development of foreign trade. It is a sort of manual of the source of export and import services and gives an indication of some of the foreign trade topics before the Foreign Commerce Department Committee together with the personnel of this committee, which is headed by Willis H. Booth of the Guaranty Trust Co., New York, Chairman.

BOOK OF A. S. T. M. TENTATIVE STANDARDS.

THE 1922 BOOK of Tentative Standards as set up by the American Society For Testing Materials, 1315 Spruce St., Philadelphia, is now in course of preparation and is made available to those desiring a copy at \$4.50 in paper binding, and \$5.50 in cloth. The publication of these annual books started in 1916 and the books themselves are naturally growing in value from year to year because they include new and important specifications and methods, thus bringing to the public more and broader information as well as reports that are up-to-date on the progress of standardization. Clay prod-

ucts, lime, cement and gypsum specifications make up an important chapter in the new offering.

1922 NEW YORK YEAR BOOK.

ONE OF THE interesting books that has come our way is a publication of about 350 pages, the Year Book of the Merchants Association of New York for 1922. In addition to reports of proceedings during the year, a list of officers and other matter pertaining to the activities of this association, there is given both an alphabetical and classified list of the members, which makes it an interesting reference book. It is sent out from the Merchants' Association Headquarters, New York, Woolworth Building, 232 Broadway.

TRADE-MARKS AND DESIGNS PATENTED.

- No. 159,234. Vigo-American Clay Co., Terre Haute, Ind. Trade-mark registered for name "Heavy-Duty" for hollow building tile.
- No. 159,675. The Carborundum Co., Niagara Falls, N. Y. Trade-mark registered for refractory brick, refractory tile, muffles, and shaped refractories.
- No. 159,728. Ottawa Fireproofing Co., Ottawa, Ills. Trade-mark registered for building tile.
- No. 159,742. Charles H. Puls, New York, N. Y. Trade-mark registered for fire brick, brick for ovens, furnaces and the like.
- No. 159,774. Twin City Brick Co., St. Paul, Minn. Trade-mark registered for brick.
- No. 150,008. John W. Ferguson Co., Paterson, N. J. Trade-mark registered for "Circle-F" for brick.
- No. 160,537. The Carborundum Co., Niagara Falls, N. Y. Trade-mark registered for name "Firefrax" for refractory brick and tile.

Some of the noises the big financial authorities make, sound almost as inharmonious as jazz. First we are told that a soldier bonus will so strain the finance of the country as to cause trouble. Then on the heels of it we are told that there is over 25 billion dollars of idle credit in the banks of the country waiting to be used.

UNLOADING FOR 3 CENTS PER TON



Elevating and conveying equipment. Steel and malleable buckets furnished in all sizes and shapes. Chain, sprockets, etc.

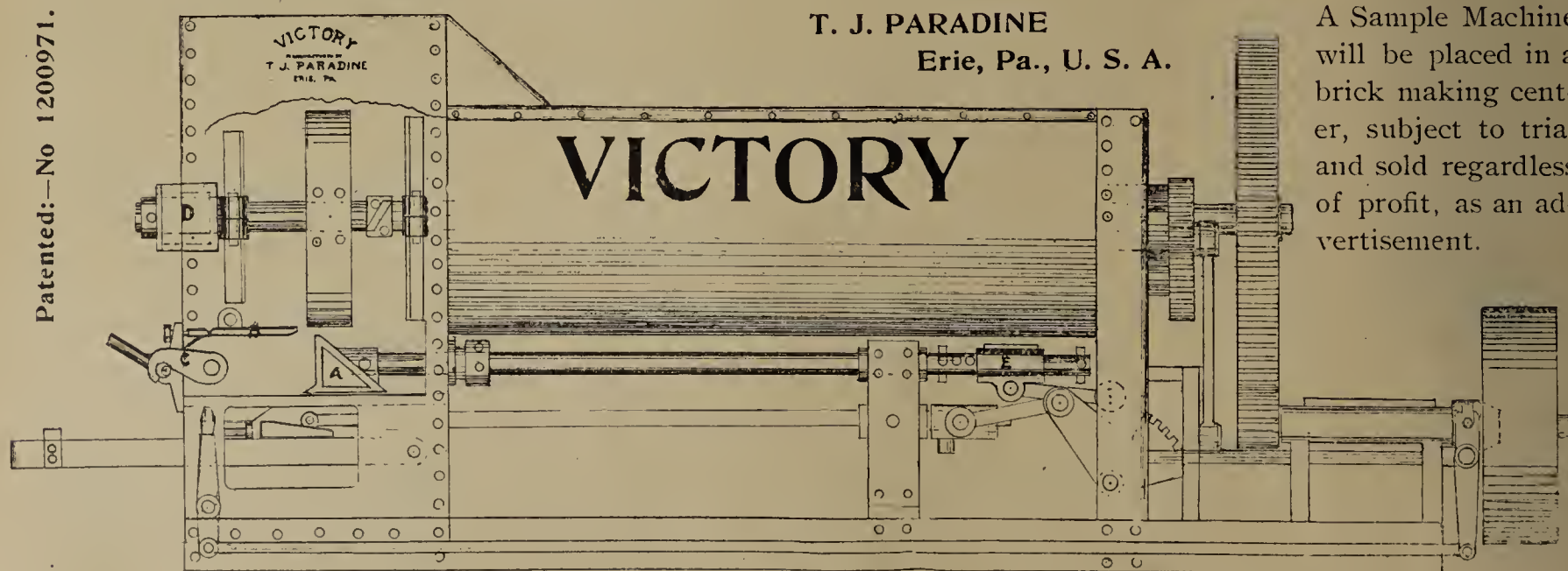
Let us quote you on your requirements.

The Columbus Conveyor Co., Columbus, O.

VICTORY—is practically an all steel machine made of $\frac{3}{8}$ " Boiler Plate mounted on 8" x 8" angles, which acts as foundation. It has but two shafts, two gears and one pulley. The press is the important feature, it regulates its self forces clay into molds stiff enough to handle, will make slabs 12" x 24", 7 brick on flat and 10 brick on edge.

My other machines are the Hercules and S. S. S.

T. J. PARADINE
Erie, Pa., U. S. A.



A Sample Machine will be placed in a brick making center, subject to trial and sold regardless of profit, as an advertisement.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 78 INDIANAPOLIS, NOVEMBER, 1922. No. 5

BRICK AND TERRA COTTA

The Two Best Building Materials, Brick and Terra Cotta, Keeping Up With the March of Progress in the Northwest. The Brick and Tile Manufacturers of Thrifty Seattle and Beautiful Portland Are Running Their Plants to Capacity to Meet the Increasing Demand for Permanent Building Materials.

SEATTLE, one of the wonder cities of the great Northwest, starts at the water front and spreads back over the hills, and has the most ardent set of boosters any city could wish for. Perhaps that is one of the reasons for the prosperity and wonderful growth of Seattle, for the boosters never lose an opportunity to sound the praises of their home town, usually the home of their adoption.

bringing it through this tunnel to the grinder. It is a blue glacial clay full of boulders, and after passing through the grinder it goes to a large rotary clay dryer which Mr. Englebrecht built himself from an old cement dryer, which has proven very satisfactory.

Oil fuel is used for drying the clay. The clay goes from the rotary dryer to an Eagle Dry Pan from the Eagle Iron Works, Des Moines, to a Fate Special end-cut brick machine.

In company with S. Geijsbeek The Clay-Worker scribe re-



Philosophy Hall—University of Washington, East Side View.

cently spent a day visiting the clay-working plants of Seattle, and, though the day was cloudy and the skies overcast, a spirit of cheerful optimism found everywhere dispelled the gloom.

At the plant of the Lake Union Brick & Fireproofing Co. we found the manager, Charles Englebrecht, on the job. Indeed, Mr. Englebrecht attributes the success of the plant, which up to seven years ago when he took charge, had not been a paying proposition, to the fact that he makes it his business to be on the job from early morning until quitting time. The plant is located in the very heart of the town and at the base of a hill from which he gets his supply of clay. A street has been built back of the plant and they have tunneled under this street and are taking the clay from the further side and

They make common building brick, a rough texture face brick, hollow tile and fireproofing.

Burning Brick and Building Tile Together.

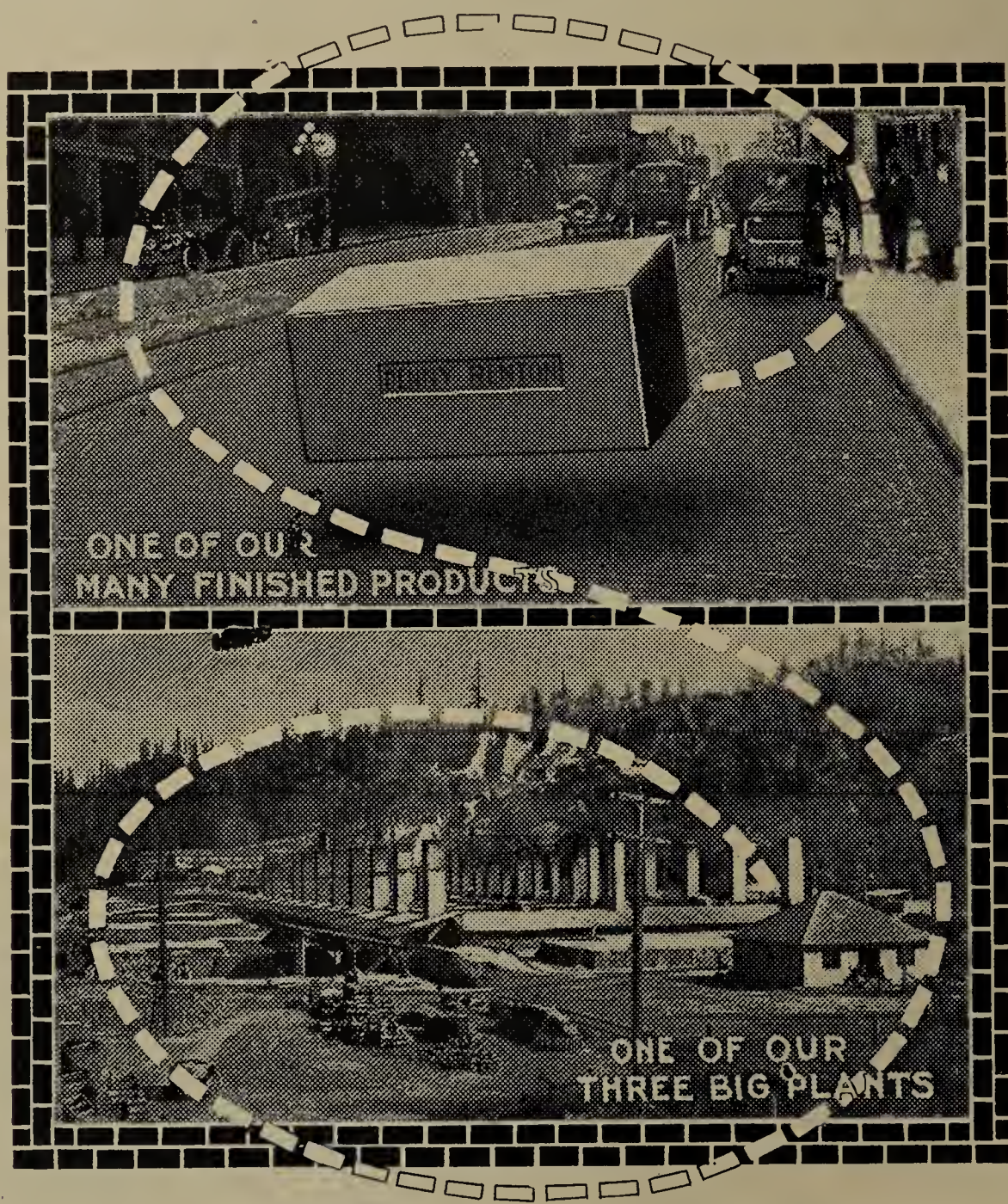
The brick and hollow tile are set in the kiln, Hoffman type continuous kiln, together and burned with a soft washed slack coal. So perfect is the combustion, owing to the control of draft, that though the kiln was being burned the day of our visit no smoke at all could be seen coming from the stack, and though located in a neighborhood of homes, there is never any complaint on account of the smoke from the kilns. All labor is paid for by the day, the wage ranging from \$3.00 to \$3.50 per day, which Mr. Englebrecht finds more satis-

factory than piece work. The plant has a capacity approximating 40,000 brick per day, and is barely able to supply the demand at \$13.50 to \$15.00 per thousand. Mr. Englebrecht said one of his rules was, "Prompt delivery and give a customer exactly what he wants." Mr. Englebrecht was formerly superintendent of the Twin City Brick Company's plant at Minneapolis and so is enthusiastic about the mild climate of Seattle, which enables them to run the plant all winter without any of the hardships of severe winter weather.

On our way to the big plant of the Denny-Renton Clay & Coal Company at Renton, seventeen miles out from Seattle,

and firing of the "bats," to the drying and burning. They use Thwing thermometers, trial pieces and cones in the burning.

The Renton plant is one of the largest clayworking factories in the West, with a capacity of 100,000 per day when running full time. At present, however, they are only turning out about half that amount. They are taking their clay from an immense hill. After stripping off the top of the hill with hydraulic sluicing, they have over 150 feet of a gray shale, which is taken in carts by gravity to a large conveyor and is carried on belts to the clay shed, from whence it goes to the pug mill and then the stiff-mud machines. Nearly all of the machinery



One of Several Clever Advertising Sketches of the Denny-Renton Co.

we stopped at the suburban home of Mr. Geijsbeek, where Mrs. Geijsbeek served a delightful lunch.

The Denny-Renton Terra Cotta Plant.

Our first stop was at the terra cotta plant of the Denny-Renton Company, of which Mr. Geijsbeek is manager. They are running full time and turning out some beautiful work. One job in dull gray and blue glazed terra cotta was nearly ready for shipment to the Northwest Finance Co. of Yakima, and another big job on which they are at work is for the four million dollar Elks Building at Portland. Five mixtures of clays are used at this plant. The entire modus operandi of manufacture was of great interest, from the drafting room and the making of the plaster molds, the molding of the clay

equipment is of the Hadfield-Penfield make. The brick are dried in a waste heat dryer and burned in down-draft kilns, of which they have twenty-two, with ten rectangular and eight round down-draft kilns. All told, they have a kiln capacity of 300,000 brick. They burn their building brick in eleven days, while the pavers take fourteen to fifteen days.

Just now they are making a specialty of their satin builders, a dark red brick with a beautiful satin-like finish. They also have what they call their paver builders, and a great variety, including common building brick, a buff building brick, paving block and brick, fire brick shapes for lining acid tanks for pulp and paper mills, special shapes, etc., etc. The Denny Renton Company furnish practically all of the paving brick used in Seattle and vicinity. First avenue in Seattle is now

being repaved with their brick. James Adderson is superintendent of the plant and has a big proposition on his hands. Here we also found an old friend, O. K. Edwards, formerly with one of the leading building brick manufacturers of Portland. The old plant changed hands and Mr. Edwards is now doing some work at the Renton plant.

At the office of the company in the Pioneer Building we had the good fortune to meet Frank C. Moore, for many years the office manager, and G. L. Rogers, the ceramic engineer, and just at present in charge of the fire brick sales department. Mr. Moore reported business in all their branches good, with prospects for steady improvement. Both Mr. Moore and

manufacturers of Seattle and vicinity, including the Builders' Brick Company, the Lohse Brick Company, Harper Clay Products Company, Puget Sound Brick and Tile Company, and the Seattle Brick and Tile Company.

At the Ceramic Department of the Washington State University.

One of the pleasant features of the day was a visit to the ceramic department of the Washington State University, which, with the College of Mines, occupies a fine new building of brick and terra cotta. Professor Hewitt Wilson is at the head of the department, which, co-operating with the State Geological Survey, is making a complete survey of the clays of the state. The work has now extended over a period of three years, and nearly every type of clay found anywhere has been located in the Northwest, from a high-grade kaolin to a red burning clay, magnesite and silica.

The equipment of the department is quite complete and includes a Mueller machine, Crossley ball machine and Hadfield-Penfield dry press, with dryer and kilns of a sufficient size to enable them to carry on their research work. Professor Wilson is a graduate of the Ohio State University, and before coming to the Washington was an assistant under Professor Arthur S. Watts, in the ceramic department of the O. S. U.

Mr. Geijsbeek, who is the Pacific Coast representative of the Fate-Root-Heath Company, has an office in the Burke Building, and in addition to this work and his duties as manager of the Denny-Renton terra cotta plant, carries on an engineering



Main Entrance Philosophy Hall, University of Washington.

Mr. Rogers have been in Seattle long enough to be thoroughly inoculated with the boosting spirit of that hustling city, where the citizens claim the rain was not a wet rain, nor the cold days really cold, but where a 2-inch snowfall will tie up the whole street car system and give every one a general holiday.

The Builders' Brick Company have a fine modern plant at 3700 Ninth avenue south, and while we did not have time to go through the plant, did admire the big stack of radial chimney block, with the name of the firm worked in with white enamel brick, which shows up for squares before you reach the plant. The company is composed of three Houlahans, father and two sons, one of the latter, F. T., being plant manager and Arthur office manager. We found Mr. Arthur Houlahan at the office, radiating cheer and optimism. Like their neighbors, they can hardly supply the demand for their products, which include common, face and fire brick, partition tile, drain tile and hollow block. They get \$13.00 to \$15.00 for their common brick. A nice display of their common and face brick has recently been installed in their office in the Hoge Building, from which builders and architects may get a very good idea of how the brick will look in the wall.

The Brick and Tile Delivery Company has offices in the same building and handles the output of many of the brick



Mr. Wethey Explaining the Merits of the Schurs Oil Burner.

business, which is growing all the time, and has established a very friendly relation with brick men generally in the Northwest.

With the Portland, Oregon, Brickmakers.

Leaving Seattle in a fog that seemed to have settled down on the city indefinitely, we journeyed to Portland, where sunshine and blue skies greeted us. Here the principal brickmaking plants are the Standard Brick and Tile Company and the Columbia Brick Company. Though Saturday, and a busy one, too, Mr. A. H. Wethey, president and general manager, took

time to drive us out to his plant, three miles from the city, where they make about 35,000 brick per day, mostly common brick. The plant is a model of neatness, and Mr. Wethey takes pride in same. They have a hill of clay covering twenty acres and nearly one hundred feet high, so they need have no fear so far as supply of the raw material is concerned. They have just completed an immense clay storage shed, from which the clay goes to a Eureka crusher and then to a Hadfield-Penfield stiff-mud brick machine. They have an International wet pan and semi-automatic cutter and an American dry pan. They make some sewer pipe on a Taplin-Rice-Clerkin sewer pipe press. The brick are taken from the machine to a steam dryer, where it takes seventy-two hours to dry them before they are taken to the kilns. They have a fifteen-chamber continuous kiln, where coal is used for fuel, and two round down-draft kilns, where they watersmoke with coal for seven days and finish burning with oil, the kilns being equipped with Schurs oil burners, which Mr. Whethey thinks is the best oil burner on the market.

Mr. Wethey called especial attention to the engine which they are using which was made by Hinckley & Co. of San Francisco in 1865. The plant is run by electricity, for which they use a 125 horsepower Allis-Chalmers motor.

The company has recently erected a small pottery kiln which they use in connection with their experimental work. They have a small laboratory where research work is being carried on by Mr. Dawson. He has accomplished some quite wonderful results in the way of glazed culinary ware and small hearth tile, and it will soon be a question of making them in merchantable quantities. Nearly all work is done by contract, getting out the clay and putting it in the storage shed; setting the brick in the dryer and kiln; loading the cars or trucks for shipment, all contracted for, and Mr. Wethey finds this a most satisfactory plan. They are never troubled with strikes or threatened strikes.

Mr. Wethey drove us back to the office of the Columbia Brick Works, where Mr. Henry Kreitzer, secretary of the company, was waiting to drive us out to the works at Gresham, sixteen miles out from Portland. We stopped long enough to admire the new brick office building and to catch a snap shot of Mr. Wethey and Mr. Kreitzer out in front. The rough texture "rug" brick show up well in the wall. Vandals recently broke in and failing to open the safe, rifled one of the desks, turned it upside down and set fire to it. The only damage was to the desk and the floor, as the fire was discovered by a watchman in the neighborhood soon after it was started, but the smoke and slow burning varnished wood of the desk gave the fine brick fireplace and walls of the office a dark glaze which is quite attractive. Here's a hint to brick men looking for new effects—try finishing the burn with broken up desks or other varnished furniture.

Where the Labor Problem Has Been Solved.

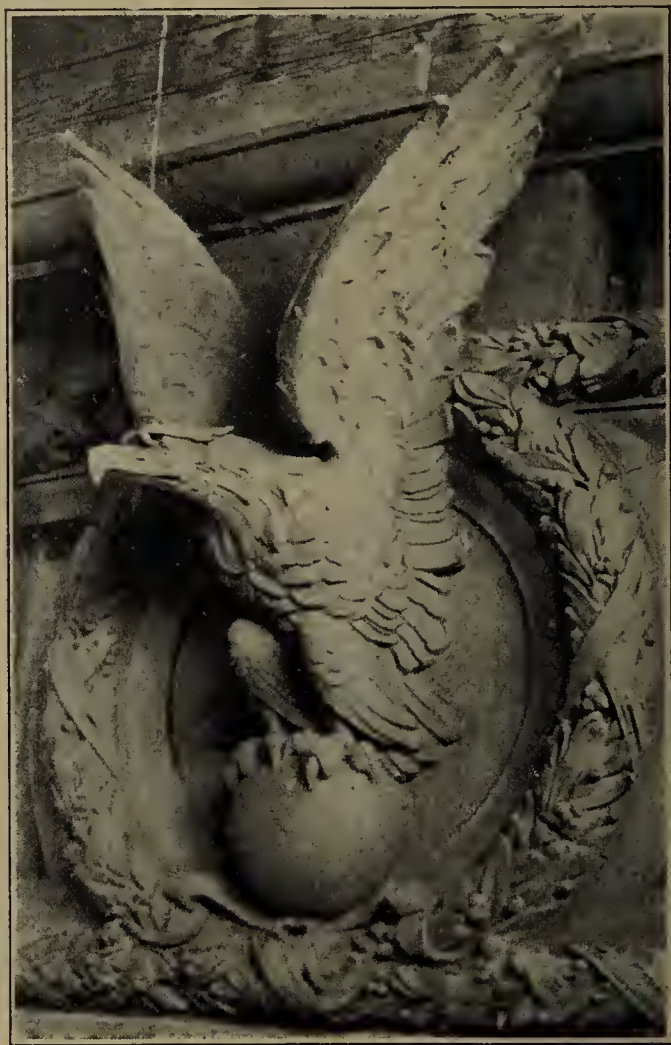
Accompanied by Mrs. Kreitzer and the small son we drove over fine paved roads to the plant, which is really located at Hogan Station, one mile east of Gresham, in a beautiful section of the country. Inasmuch as many of the workmen own their own homes, with accompanying garden plot, there is very little labor trouble at the Columbia plant. They have reduced the labor problem to the minimum. They turn out the equivalent of 35,000 brick per day, or about 1,600 tons of ware per month, and employ twenty-two men. The clay is dug by hand and brought in from the bank, which covers forty acres, by conveyors and goes from the shed, where it is thoroughly mixed, to Hadfield-Penfield pug mill and disintegrator, and is fed by a Rust feeder to the Hadfield-Penfield stiff mud brick machine.

While they make a fine brick, the larger part of their product is a 6x8x12-inch hollow building block, known as Columbia building block. The ware is dried in a Justice radiated heat dryer and burned in a Klose continuous kiln of twenty chambers. The plant is so laid out that there is no unnecessary

handling of the ware. The dry ware goes into the kiln on one side direct from the dryer and comes out on the other side of the kiln and is loaded directly on cars for shipment, the railroad siding running along that side of the plant. Mr. A. Klose, the inventor and builder of the Klose or Oregon continuous kiln, is president of the company, and they are proud of the record of the kiln which gives them as nearly 100 per cent burns as it is possible to get in any kiln. They set the brick and tile in the kiln together.

The plant is operated throughout by electricity. Franz Albrick (by the way a most appropriate name for a brick manufacturer) is superintendent of the plant and lives in a beautiful bungalow nearby.

The company has built up a big trade for their hollow block, and have enough orders in hand to keep them busy until the first of the year. They are furnishing the hollow block and



A Bit of Ornamental Terra Cotta at the Denny-Renton Plant.

partition tile and the Standard Brick and Tile Company the face brick for the big \$4,000,000 Elk Temple in Portland, previously mentioned. Mr. W. A. Currie is sales manager and manages to place the output without any trouble.

The company expect to build another unit the size and duplicate of their present plant right next to same which will double their present capacity.

Mr. Kreitzer is a native Hoosier, and for many years was sales representative for the Denison hollow building tile, coming West a number of years ago and locating in Seattle. He has been with the Columbia Brick Company now for two years or more, and is enthusiastic over Portland and its opportunities. He thinks one gets more out of life in the great West through being able to live more out of doors, close to nature. Business is more free from petty competition and worries which seem to beset it in the East.

Rolling home through the amber dusk, life did seem sweet and wholesome. The writer is indebted to both Mr. Wethey and Mr. Kreitzer for a pleasant and instructive afternoon, and a similar treat awaits any clayworker who stops in Portland long enough to greet these two genial, enthusiastic brick manufacturers.

ADDIE M. WALLACE.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.

PRICES PREVAILING on September 15 in forty-four cities for common brick have been secured by "The Clay-Worker" bureau here. Following are the figures:

Scranton	\$25.00	Baltimore	\$20.00
Richmond	17.50	Fairmont	24.00
Columbia	12.00	Savannah	14.00
New Orleans	14.00	Boston	22.00
Fitchburg	21.00	Haverhill	25.00
Fall River	23.00	Albany	22.50
Rochester	17.25	Buffalo	20.12
Niagara Falls	21.00	Poughkeepsie	18.00
Newark, N. J.	24.00	St. Louis	14.50
Kansas City	16.50	Grand Forks	15.00
Sioux Falls	15.00	Aberdeen	16.00
Shreveport	13.50	San Antonio	17.00
Tucson	12.00	Sacramento	17.00
Pittsburgh	15.00	Erie	15.75
Cleveland	16.00	Akron	14.50
Mansfield	22.00	Lorain	23.00
Newark, O.	19.00	Dayton	17.00
Cincinnati	18.00	Detroit	17.50
Pontiac	14.40	Lansing	14.00
Bay City	13.00	Benton Harbor	18.00
Milwaukee	12.00	Waterloo	18.90
Des Moines	16.00	Council Bluffs	16.50

Brick production and sales for September show substantial increases, according to the Department of Commerce, which has just issued statistics covering the production, sales and stocks on hand of clay fire brick and silica brick for September of this year with comparative figures for September of last year. Following are department's figures:

	Sept. '21 Thousands	Sept. '22 Thousands
Clay fire brick—		
Production	24,641	48,839
Shipments	25,931	52,693
Stocks, end of month	141,017	156,899
New orders	25,512	59,771
Unfilled orders	27,033	79,511
Silica brick—		
Production	4,633	12,861
Shipments	3,883	11,332
Stocks, end of month	42,341	37,108

In an open statement directed to James A. Wetmore, acting supervising architect of the Treasury, the Associated General Contractors of America object to Mr. Wetmore's assertion that building costs will drop considerably within the next eighteen months. The contractors' organization makes use of rather pointed language in its protest to the treasury, stating that the dissemination of impressions of this kind is doing more than any other one thing to hold back the country's building program, and encourages those who are ready to build now to hold off for the promised "reductions." The treasury official is told plainly that construction costs will continue to increase to a higher level than at present and that the demand for construction will continue for an indefinite time.

Not only has the cost of building been going up for the past six months, according to the Associated General Contractors, but so has the cost of materials, wages in the building trades, and the general average of wholesale prices.

"The behavior of all of these prices in increasing during a time of recovery from business depression," say the con-

tractors, "is entirely normal. It is a phenomenon which always occurs in like periods. We believe that it is a very strong indication that prices in general have been stabilized for the present on a new price level in the neighborhood of 70 per cent higher than that which prevailed in 1913. This means that prices will continue to go up until the present period of prosperity is fully established, and will not go down again until the beginning of the next business depression. The next depression will probably be only a moderate one—such as we were familiar with before the war—and will be accompanied by only moderate decreases in prices.

"Instead of expecting that building costs will be materially lower in eighteen months from now, we anticipate that they will continue to increase during the greater part of that period, and that they will be at that time, perhaps, at about the beginning of a decrease but at a point considerably higher than at present. We believe, further, that the decrease which may be expected to begin at about that time will not go to a point very much below the figures reached during the past year."

According to reports here, the U. S. Circuit Court at Cumberland, Maryland, has granted the Big Savage Brick Co., of that place, a restraining order against the United Brick and Clay Workers of America and Locals 313 and 375 and their presidents, prohibiting them until further order of the court from interfering by intimidation, coercion or threats of violence, or in any manner obstructing the business operations of the brick company. A strike has been in progress at the firm's plants for some time.

Elliott W. Williams, seventy-three years of age, pioneer brick manufacturer of Clarksburg, W. Va., fell dead in the front yard of his home in that place a few days ago while sawing a tree stump. Mr. Williams established the first brick manufacturing plant in that section about thirty-five years ago, after removing to West Virginia from Uniontown, Pa., where he had previously been in the brick business.

ALTHOMAR.

WHEN THE LIGHT OF SOCIALISM FAILED.

THE GREAT FIZZLE in Russia, in which the light of communism, socialism or whatever you want to call that government or common ownership thing failed, furnishes some impressive lessons to the world, one of which is a lesson in ownership.

Russia has not only invited capital and capitalism, but it has announced that the country is also going on to a policy of private ownership of land, and in doing this it is preparing the way for the birth of a real country with a great future.

There is room for some interesting speculation in the failure of government ownership ideas on the question of to what extent it is advisable to go in the magnitude of private ownership. Consolidation and concentration of industry into big powerful units reaches a point eventually where it may become a prey to the ownership weaknesses which have overthrown community ownership in Russia.

Private ownership is not only a great thing, and so far the best thing we have devised in this connection, but the more widespread we can have this private ownership to get reasonable efficiency in our industries the better the promise is to be for us. There is need at times for consolidation and concentration into bigger units for the sake of efficiency and better control, but it is so easy to carry this to extremes which will develop faults and weaknesses that we should be viewing it thoughtfully. Also we should take what has happened in Russia as a note of warning and a hint toward widespread private ownership, instead of following the trend toward the concentration of ownership into as few hands as practical.

COMMENT ON N. B. M. A. CONVENTION WORK

Part Seven—"Advantages and Disadvantages of the Tunnel Kiln System of Burning Brick and Tile."

By W. D. Richardson.

WE HAD TALKS at our 34th Convention on the Tunnel Kiln, but these talks were by patentees and promoters of this type of kiln, and before it had come into successful use in the brick and tile industry. Mr. Hanley's paper before the 36th Convention was the first that has been presented on the tunnel kiln by a brick manufacturer, who had himself built and operated such a kiln. As it is advertised that other brick and tile manufacturers are successfully using the tunnel kiln, an effort should be made to get them to come before our next convention with accurate data of the performance of their kilns, the average daily output, the cost of fuel and labor, the expense of upkeep, including time lost, as well as the cost of the kiln and cars, not only the cars required to fill the tunnel, but the cars that are required to keep the kiln in constant operation. Undoubtedly, Mr. Hanley could now give us valuable data from his experience of the past year.

No subject is of greater interest to brick and tile manufacturers today than the tunnel kiln, since they are hoping that in this they may, in part, at least, realize their dreams of a perfect kiln. All are coming to see that improvements in the chemical and physical operations of brick manufacture have not kept pace with the mechanical improvements, that most manufacturers are burning their brick very much as did their fathers before them, but that we are entering upon an era of general, radical change in forms of kilns and methods of burning, that this final and most vital operation must be carried on more economically and with more positive results. It is a matter of common knowledge also that the wasteful periodic kiln must be supplanted by some form of the continuous regenerative kiln. No engineer or well-informed brick manufacturer believes that any single form of continuous kiln will be found best adapted to all conditions and purposes. The tunnel form, the burning of the brick on cars while being moved through a brick tunnel, every vertical section of which is kept continually at the same temperature, is ideal and the contemplation of it most fascinating. Though the idea is not new and though there have been several failures in carrying it out, yet there is a general feeling that there are great possibilities in such a method of burning and that engineers will eventually overcome the inherent difficulties and, since so many are now trying out this kiln, that improvements are bound to be made that will make it more practical for the burning of our products.

Fine Brick Made on Hanley Plant.

Therefore, we feel indebted to Mr. Hanley for the demonstration he is making of the tunnel kiln and for the exposition and analysis he made of it at the Indianapolis convention. Though I was not present, I later had the privilege of visiting this interesting plant and seeing the kiln in operation, and I will say here that for quality and uniformity of product, I have never seen anything equal to the cars of brick that I saw taken from the kiln during the time of my visit. Naturally, one would expect that in a kiln with brick set only 14 courses high a more uniform product, free from

kiln markings, would be obtained, especially when burned with gas. It must be considered also that at Mr. Hanley's plants good burns have been the rule in periodic kilns, with higher setting, and that the "Bradford Reds" have for many years been the standard of excellence in face brick.

With an oxidized shale of fair vitrification range and burning to beautiful red shades, and with years of experience with this material, combined with good engineering ability and a most efficient organization, one would not expect Mr. Hanley to make a failure of anything that he undertakes. That he has made a success of the tunnel kiln system is due, in a great measure, to the above conditions, as well as to the special patented design of kiln that he selected.

Thorough Drying Essential.

An important element of the success of the Dressler kiln in Mr. Hanley's hands, is the dryer and his practice of thoroughly drying the bricks on the kiln cars. This not only saves the resetting of the brick but it gives the advantage that the cars go into the kiln warm and the brick heated through to the center. That this is a practical thing to do with dry-press brick all would admit, but that it can be done successfully with stiff-mud brick is remarkable. The question arises, at how many stiff-mud plants can the brick from the cutting table be set 14 high and moved into dryer without deformation or setting marks? Probably no surface clay brick would stand this, but many shale brick would, if the shale has sufficient bonding power to form a good bar when made so stiff. In most cases, the auger machine would need to be stronger and the power for driving would have to be increased.

It should be considered also that Mr. Hanley has the best fuel known, natural gas, which is most easily regulated to uniform temperatures.

Mr. Hanley's Paper.

In his paper Mr. Hanley has given a clear analysis of the problem of the tunnel kiln. I would modify only a few statements, seeing some things from a different angle, and it is only these that I will mention.

In naming the advantages of the tunnel kiln, Mr. Hanley gives "Twenty per cent saving in setting, if the product is reset." I have watched the setting of brick on cars of two tunnel kilns and I fail to see any saving in the cost of setting over the best methods of setting in other kilns, though the work is a little easier for tossers. To be sure, tossers may be eliminated, but there is no saving in this.

"Twenty per cent saving in unloading and sorting." This is doubtless true where the sorting is done outside of kiln, as was formerly the practice at Hanley's plant, but the most economical place for sorting the brick is in the kiln, and over this method I see no saving with the tunnel kiln. There is, however, the advantage of more comfortable working conditions. Moreover, I can see no practical way of mechanical handling of face brick from kiln cars to stock shed or to railroad cars, though this might be done with common brick, but there are more economical methods of common brick manufacture than are possible with the tunnel kiln.

Of course, it is understood that in the item of fuel sav-

ing, he is making comparison with periodic kilns and not with other forms of the continuous kiln.

Mr. Hanley concludes his paper with advice to those considering the adoption of the tunnel kiln system, every word of which should be weighed carefully. Special emphasis should be given to the sixth point in his conclusions, "Avoid material that contains too much carbon or has very much shrinkage." There are those today who regret not having had and acted upon such advice—and there will be more to follow.

More Papers and Discussions Necessary.

Now, let us have more papers and discussions on the tunnel kiln by manufacturers who are using or have used such a kiln. Let us have the records of failures, as well as successes, as there is often more to be learned from clear accounts of failures than from successes. An editorial in the October 12th number of the *Engineering News-Record* quotes a correspondent who complains of the incompleteness of published records and his words express very well what I mean, as regards manufacturers as well as engineers. The thought is also one that should receive more attention by the editors of our clay journals, in the interests of their subscribers.

"Anyone who has had occasion to search through the records of a particular branch of engineering soon finds that much valuable information is frequently omitted in work described, and that many important works are left without any published records. The information that is published usually covers only the favorable results obtained, and rarely mentions the unfavorable ones. Yet hardly an engineering work is carried through without some unsuccessful attempts being made somewhere; if these were generally recorded and published, not only the engineers directly connected with the work, but also other engineers, might learn to avoid them in the future. As it is, the experience and knowledge gained in these attempts are lost to the engineering profession at large."

The announcement of the 37th Annual Convention has just been received and I think all will be pleased with the arrangements made and that the attendance will be a record-breaker. So it is time to cease further comment on the Indianapolis convention, that there may be space in our official organ for matters pertaining to the coming Cleveland meeting.

HELPING THE ASSOCIATIONS.

The Attorney General of the United States is credited with a public utterance which it is thought will tend to help the many trade and business associations of the country. He is said to have declared in favor of creating some sort of Federal agency which will help business men to guide association activities through law-abiding lines and keep them off the shoals of the anti-trust laws.

This is an idea that business men and active workers in associations have had for some time, and they thought for a while this idea was being developed in the Federal Trade Commission. But here, as in some of our other legislation, there was a withholding of specific authority which spoiled the effect so far as real effective co-operation is concerned.

Some day we will probably work out something of this kind to which association work and activities can be submitted, and which will co-operate and help association workers in their efforts. Let us hope that when the idea is carried out, however, that it will include the advice and guidance rather than supervision and regulation. The less we can have of government meddling in business, the better. Co-operation, however, along ideas advocated by Mr. Hoover, Secretary of Commerce, will be good for both business organizations and for the government.

EXPORT DEMAND FOR BRICK NOW FAST INCREASING.

By Alfred T. Marks.

FOLLOWING several months of comparative slackness foreign trade in American brick and other clay products has again entered upon a period of increasing prosperity. Exports of brick products, in common with practically all of our manufactures, have been at a comparative "stand-still" since spring, the total clay products sales abroad barely holding their own, and in several of the lines falling back, as compared with the corresponding period of last year.

Statistics just available at the Department of Commerce indicate that in the month of August, this year, our foreign trade in brick and other clay products far surpassed that for August, 1921—the increase being considerably over \$100,000 for the one month. In August, 1922, the exports of fire-clay brick, silica brick, other refractory brick, refractory shapes, building brick, hollow building tile and wall and floor tile totalled \$289,604, while for August, 1921, the total was \$185,830.

The exports in detail for the past August are as follows:

Fire-clay bricks	\$177,240
Silica bricks	11,443
Other refractory bricks	23,035
Refractory shapes	10,290
Building bricks	32,696
Hollow building tile	10,775
Wall and floor tiles	24,125

An analysis of the exports of brick and related lines in the past six months reveals not a few changes in the foreign markets served by our manufacturers. These changes mean a decided realignment of the trade. One of the most significant features of the present export trade in these lines, as compared with past years, is that we are capturing the markets nearer home to the comparative disregard of the countries of Europe and other sections. This is shown by the fact that we are now shipping brick to both east and west coast countries of South America in increasing quantities, while our sales to western Europe are falling off considerably. The latter fact is accounted for by Department of Commerce officials by the recovery of the building materials industries of the European countries to a point where they can, to a considerable extent, take care of their own demands and meet nearly all of their domestic requirements.

It is further pointed out by officials in Washington who are familiar with developments in these lines that the countries on the American continent—which include not only South and Central America, but also Canada, Mexico and Cuba and the West Indies as well—are the logical markets for our brick manufacturers. This is further emphasized by the fact that none of these countries manufactures brick or other clay products to any extent, and that their demands in these lines are rapidly increasing. At this time we are exporting brick to all of the countries on the western hemisphere which import them. This means that we now control and can hold these markets permanently if we put forth the effort to do so. Competition on the part of European brick-makers is quite unlikely, if not impossible; the brick manufacturers of the United States have the important advantage of contiguity to the markets, and are able to meet all comers in the matter of price, and transportation facilities are improving constantly.

In boosting the brick game let us not overlook the fact that plan books are always a great aid in promoting home building, nor neglect to keep up the work of plan book making.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

GROUP MEETINGS GOOD.

SOME INTERESTING group meetings of the Hollow Building Tile Association were held during October, and others are scheduled for various dates of November. So all together there is a busy season of group meetings in the hollow tile industry this fall and they are doing good. They help increase both the membership and enthusiasm of the members, and they open up discussions of ways and means to promote the interest and progress of the hollow building tile industry in different sections of the country.

Group meetings in the East seem to have been particularly well attended, and out of it has come a splendid co-operative spirit among the Eastern manufacturers. The same spirit among other groups will make for a lot of good for everybody.

There are many specific questions of importance to the industry to be discussed now, among them being that of standardization and the elimination of useless sizes. And incidentally there are the social features, the get together and get acquainted sessions, which take on the form of dinner gatherings and help promote good fellowship, as well as furnish a good time. All manufacturers are invited to attend these group meetings, which makes it a splendid opportunity for non-members to go and get acquainted and see what the association members are doing as a preliminary step to joining in and helping along with the good work.

SILO TILE.

At a meeting of the National Association of Farm Equipment Manufacturers at the Congress Hotel, Chicago, October 20, quite a lot of interest was centered on freight rates and traffic matters; what higher freights are doing to burden the farmer, both in buying material and marketing his product.

J. S. Sleeper, acting secretary of the Hollow Building Tile Association, made a talk to this gathering, discussing particularly the traffic situation and freight matters, in the course of which he told of the decision in the general brick case No. 10733. Also he said that the 60,000 pound minimum on carload shipments hits the silo trade hardest because it requires two silos to make this tonnage, and a great number of orders and shipments are in single silos only. His advice, however, was to accept the 60,000 minimum and to apply to the railroads for a higher rate on 40,000 and 50,000 pound loadings.

The other alternative of course would be some co-operative work with local dealers and agents of manufacturers of silo tile so as to buy in sufficient group quantity to insure full carload in each shipment. In a word, if material for two silos can be ordered at once instead of a single the minimum

requirements will be complied with, and at the same time the freight cost will be lessened. There is more than a hint in this to silo tile manufacturers and their dealer agents about getting together and developing their orders in a manner to make for full car shipments.

MAKING MOTION PICTURES HELP.

The hollow tile people, through the co-operation of the association, are doing some good work in educating the public to the various uses and features of hollow building tile through the use of moving picture films. The association records indicate that there have been showings at many schools, churches and community centers during the past two months. This is a good work that should be kept up all through the winter.

GAINS THROUGH ELIMINATION.

One of the good arguments that can be advanced in favor of the manufacturers of hollow building tile co-operating earnestly in the effort to eliminate useless sizes and patterns and reduce the hollow tile business to as few a number of standard sizes as practical, is in that it means cost saving to the manufacturer and a better chance for profit even at lower prices.

The gains to the manufacturer come through his having less capital tied up in raw material, stocks and equipment. He can manufacture more economically because there are fewer changes to make and he can increase the capacity of his equipment. His labor becomes more efficient because it is concentrated and trained to use specific sizes and patterns, and finally he can render better service, make prompt deliveries even with a smaller stock on hand, and he has less cost for upkeep and repairs because there are fewer dies involved, and in fact there is a saving all around to manufacturer.

Interest is and should be more keen among hollow tile manufacturers on this matter of standardization than in other lines of burned clay building material, because there has been a greater diversity of product in hollow tile than in almost anything else. Brick is fairly well standardized as to sizes and shapes. There are many varieties in color and in texture and face appearance, but on the whole brick sizes are fairly well standardized.

That is the first thing the hollow building tile industry need to do, get its sizes standardized and get them reduced to as few sizes as it is practical to get along with and fill all the structural needs. Just how many this will take may have to be determined, but it is easily evident to anyone looking over the industry that half or more of the existing sizes and

patterns can easily be eliminated and both the tile industry and the public profit therefrom.

So it is important to every tile manufacturer for him to give earnest support and co-operation in the efforts to standardize hollow building tile and eliminate many useless sizes and patterns.

A WAKEFUL "SLEEPER."

J. S. Sleeper, acting secretary of the Hollow Building Tile Association, though a quiet, soft spoken man, has long been an active man of wakeful and broad vision in the work of the association. He has been actively in charge of the advertising and publicity work, and has not only developed some splendid illustrated advertising matter with the human element and the home spirit in it, but he has all along had some very clear visions of the duties of hollow building tile manufacturers to their product and to the building world which they serve. One hobby of his is insistence upon maintaining that high standard



J. S. Sleeper, Secretary Hollow Building Tile Association, Chicago, Ill.

in the products of the hollow building tile plants which will insure not only the confidence of architects and builders, but will beget for it confidence and a growing favor on the part of the general public. He has been the true optimist of the Hollow Building Tile Association headquarters for quite a number of years now, and no one has been more wide awake to the future possibilities of hollow building tile in the structural world if it is properly exploited, and there stays with the industry that spirit of progress which will develop new ideas and experiment with new uses of tile until it gains the broad recognition which is due it.

FILL OUT THAT QUESTIONNAIRE.

Charles C. Crockatt, Chief Engineer of the Hollow Building Tile Association, who has been earnestly at work in co-operation with the Department of Commerce to standardize sizes and patterns in hollow building tile and eliminate some of the useless varieties, says in a letter to The Clay-Worker that while

they have had a steady response to the questionnaire sent out in connection with this matter, there are still quite a number of manufacturers who have not replied, and this is delaying the work.

If you are one of those manufacturers who have neglected or postponed answering this questionnaire on sizes and specifications for hollow building tile, get busy at once answering it and forward it in to the association. It means a lot to you and to the hollow building tile industry as a whole to get this matter cleaned up and in working shape at the earliest possible moment. You should be familiar with what results were gotten in the paving brick industry, where 66 sizes and patterns were reduced to 7, making for economy in manufacture as well as better understanding and better results all around.

There is also in hand a letter from William A. Durgin, Chief of the Division of Simplified Practices, which has been set up in the Department of Commerce by Secretary Hoover, with which he includes a pamphlet giving the story of the work done for the paving brick industry. He, too, makes a plea for the hollow building tile industry to get busy and do some of the same kind of good work through its organization for this industry. He points out that the manufacturers of drain tile, through the Eastern Clay Products Association, are interested in eliminating excessive variety and unnecessary sizes, and the various brick associations are taking up the same matter.

There is a chance to do the same thing in the hollow building tile industry only more of it. There is a greater variety in hollow building tile and more need for standardization and the elimination of unnecessary sizes and patterns. It is up to you to do your part in this work by properly filling out and returning questionnaire that has been furnished you for this purpose.

CEMENT PRODUCTION IN 1921.

DETAILED FIGURES are now available on the production of Portland cement for the calendar year 1921. These figures show a total of 98,842,049 barrels, with Pennsylvania as usual leading all the states in quantity. It is an interesting fact, however, that development in the Western country has brought California up to second place in the rank of states, with Illinois third, Michigan fourth and New York fifth.

POWER EXPOSITION IN NEW YORK.

IMMEDIATELY following the annual meeting of the American Society of Mechanical Engineers, and the American Society of Refrigerating Engineers in New York, the first part of December, there will open at the Grand Central Palace on December 7, to run till the 13th, the National Power Exposition. This will furnish some interesting educational opportunities for those who desire to study the best and newest devices in power equipment and power producing methods.

THE MAGNETIC SEPARATOR IN CERAMICS.

ONE OF THE interesting papers read at the gathering of the American Ceramic Society on Ceramic day had to do with the application of the magnetic separator in the ceramic industries. The paper was prepared and presented by E. S. Hirschberg, engineer of the Ding's Magnetic Separator Co., Milwaukee, Wis. For the interest and information of those who were not present the paper has been reprinted in folder form with illustrations, and makes a good contribution to the practical literature on the subject of magnetic separator in the ceramic industry.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,432,629. Treatment of Clays for Manufacture. Walter Smith, London, Eng., patentee.

The production of articles of clay saturated with carbon by heating clay together with a material containing volatile carbon compounds with the exclusion of air so as to drive off the water of combination and the volatiles and leave the excess carbon within the mass of the article.

No. 1,431,318. Interlocking Brick. Jesse C. Martin, Jr., San Francisco, Cal., patentee.

A brick having bosses upon a surface thereof and receptacles indented upon the opposite surface thereof, the bosses and receptacles being coaxial and each being spaced equally from an end, the sides and the center line of the brick, the depth of the receptacles being greater than the height of the bosses.

No. 1,431,936. Tile or Block for Boiler Baffles. Samuel E. Diescher, Wilkinsburg, Pa., patentee.

A baffle for boilers having in combination two similarly shaped metal blocks or sections having a combined length approximately equal to the distance between adjacent tubes in a boiler, each block having one end concave for engagement with the tubes and a yielding packing interposed between adjacent ends of the blocks.

No. 1,431,530. Interlocking Brick. Charles H. Leicester, Ocean Falls, British Columbia, Canada, patentee.

In a wall construction of the character described with the bond laid longitudinally, a plurality of layers of juxtaposed blocks, key portions on said blocks forming spaces, the key portions of the blocks in one row of blocks fitting into the spaces formed by the key portions on the opposite side of the blocks in the adjoining row, and keyless blocks to form the upper and lower rows for forming openings between said upper and lower rows and the rows next adjoining said upper and lower rows.

No. 1,432,638. Apparatus for Transporting and Unloading Brick. William J. Sullivan, Chicago, Ills., patentee. Patent assigned to American Equipment Co., Chicago, Ills.

Brick handling apparatus of the kind described, comprising a framework adapted to be suspended in balanced relation from an overhead support, a plurality of brick engaging fingers normally extending horizontally and adapted to be the lifting, supporting and carrying devices for handling a plurality of brick in stacked relation, together with means permitting an inclination of said brick engaging devices at any time to afford a gravity discharge of the brick, in combination with means acting on said devices to effect a gradual inclination.

No. 1,434,023. Kiln. Frederick Peiter, Brooklyn, N. Y. patentee. Patent assigned to Robert S. Kent, Brooklyn, N. Y.

In a rotary kiln, a main housing providing a drum chamber in its upper portion, a kiln drum mounted to extend through and rotate in said drum chamber, a fire-box in the lower portion of said housing beneath the discharge end of said kiln drum, a combustion chamber extending forwardly from said fire-box through the lower portion of said fire-box and combustion chamber from said drum chamber, said partition member having a port beneath the receiving end of said kiln drum affording communication between the forward ends of said combustion chamber and said drum chamber.

No. 1,433,450. Oven-Wall Construction. Joseph Geiger, Steelton, Pa., patentee.

In coke oven wall construction, spaced inner and outer tiers of bricks arranged in courses, and flue bricks disposed between the courses and each provided with an opening and at opposite sides of the opening with ribs for engagement with the abutting ends of the first mentioned bricks, the said ends of the first mentioned bricks being rabbeted to receive the ribs.

No. 1,432,068. Hollow Tile Building Block. Austin F. Jones, Detroit, Mich., patentee.

In a building element of the character described, a hollow block grooved upon its outer face to represent a plurality of superimposed bricks with a plurality of interlocking projecting portions extending from the end of each block adjacent to its outer face said projecting portions having a relatively wide base adjacent the block and tapering in a blunt outer end said projecting portions alternating with recesses in the body of the block shaped to receive like interlocking portions of a similar block when placed in adjacent relation.

No. 1,433,300. Brick-Making Machine. Edmond Quillet, Vevey, Switzerland, patentee.

A machine for making hollow bricks of compressible material comprising an upper plate, a lower plate, means for simultaneously moving the said plates toward and away from each other, a mold carried by the lower plate for receiving the material to be compressed into bricks, and means cooperating with the upper plate in the separation thereof from the lower plate for removing the bricks from the said mold in which the same are formed.

No. 1,433,863. Tile. Samuel A. Williams, Lockport, N. Y., patentee.

Channel-form tile, longitudinally tapered, externally flanged at the edges, recessed internally at the edges of the large end to receive the external flange on the small end of a similarly formed tile, and to provide an abutment limiting the lap of one tile on another, the tile recessed on one end at the crown, a tongue adapted to fit such a recess, secured to the tile at one end and of such length as to project from the lap of two such tiles when lapped, and to bend over the lapping end of one of said tiles.

No. 1,433,583. Fire-Brick Arch and Brick Therefor. Alfred H. Willett, West New York, N. J., patentee.

A fire brick for arch constructions provided with a projection upon one edge intermediate its ends, said projection extending from one horizontal face to the other, and a correspondingly disposed and formed recess in the other edge, and oppositely disposed end supporting surfaces constructed to engage supporting members and to reversibly or invertibly support the brick whereby the projection on one brick may be made to contact with that on an adjacent brick or whereby the projection on one brick may be made to engage the recess in an adjacent brick.

No. 1,433,417. Tile-Making Apparatus. John B. Rosa, Detroit, Mich., patentee.

In a tile molding apparatus, a frame, a mold board having cells therethrough pivotally supported on the frame, means for latching the mold board in horizontal position on the frame, an elastic plunger in each cell, a stem therefor, a plate to which the stems are secured, said mold board having sockets in the ends thereof, headed members received in the sockets, stems on the head members secured to the plate, springs on the stems exerting a pressure between the mold board and plate, means for latching the mold board to the frame when the same has been turned on its pivots to bring the plate uppermost, a removable pan on the frame to receive molded tiles from the cells, means pivotally secured

to the mold board and disposed over the plate comprising members provided with handles, said members having lugs thereon in contacting engagement with the plate whereby when the members are swung to move the plate to cause the plungers to travel through the cells to eject tiles therefrom and to also cause the spring influenced headed members to contact with the pan for limiting such movement of the plungers.

No. 1,432,248. Dry Kiln. Joseph F. Hirt, Chicago, Ills. patentee.

A kiln having therein a separate drying chamber, a separate heating chamber, condensing chambers, separate heating units, each of which may be controlled from the exterior, separate fresh air intake ducts each of which may be controlled from the exterior, separate humidifiers each of which may be controlled from the exterior, and separate exhaust stacks, each of which may be controlled from the exterior, means whereby the heat given off from the top of the drying chamber is passed to and into the main path of circulation, thence over the surfaces of the product and thence downwardly to the condensing chamber and thence into the heating chamber.

Trade-Marks and Designs Patented.

No. 156,574. Glasgow Clay Products Co., Glasgow, Va. Trade-mark registered for name "Glasgo" for brick.

No. 159,886. Anne Veronique Gowen-Lecesse, Paris, France. Trade-mark registered for basic materials used in the manufacture of refractory bricks.

No. 160,181. John W. Ferguson Co., Paterson, N. J. Trade-mark registered for brick and other building materials.

No. 160,348. Robert F. Martin Corporation, New York, N. Y. Trade-mark registered for name "Martin Twin Brick" for bricks.

No. 160,393. Binney & Smith Co., East Orange, N. J. Trade-mark registered for clay for modelling and other purposes.

No. 160,507. Geo. S. Good Fire Brick Co., Patton, Pa. Trade-mark registered for fire brick and paving brick.

No. 160,512. A. P. Green Fire Brick Co., Mexico, Mo. Trade-mark registered for fire brick cement.

TRADE PAPER SERVICE.

AT THE ANNUAL convention of Associated Business Papers Lewis E. Pierson, President of the Merchants' Association of New York, and Chairman of the Board of Directors of the Irving National Bank, in the course of an address on business conditions, had this to say about the influence and service of the trade press:

"They can bring the business man into touch with all the national problems which affect him profoundly, though indirectly. They can supply him with the facts which will enable him to form correct conclusions, not only on his business, but on the business of the country as a whole.

"Finally they can throw their great influence toward the achievement of an industrial understanding which will do for industry what the Federal Reserve system has done for finance."

There is no question of the important service the trade papers of the country render to industry and business, but that is not all. Most of the publishers are anxious to render even more and better service, and they are able to do this when the readers manifest a keener interest and show a co-operative spirit. No matter what in the way of good news and counsel may be contained in the printed pages of your trade paper, you cannot profit or benefit from it unless you read it. Papers that

are piled unopened and unread in your office cannot render you the service they should, and, though the publisher has performed his duty in publishing the paper and sending it to you, he will be pleased and able to render you better service if you will read what has been printed and give attention to the different ideas set forth.

More reading and a keener interest in the trade papers on the part of those who receive them will pave the way to the trade press, rendering even a greater service in the future than it has in the past.

ARCHITECTS AND HOUSE PLAN SERVICE.

WHAT IS SAID to be the first definite movement on the part of architects and contractors to combat free service plans of retail lumber dealers has been started by several prominent architects of Indiana organizing what will be known as the Small House Service Bureau, which will specialize in drawing and marketing plans for small house construction.

It is an interesting fact in this connection that the lumber industry has for many years made a strong feature of house plans and free architectural service for the average home builder. There are many ideas and plan service schemes in operation throughout the country, most all of them through the co-operation of retail lumber dealers. And there is no doubt but what plan books and pictures of homes and floor plan outlines supplemented by blue print drawings have done a lot to promote new home building, and incidentally they have perhaps cut into the field of architectural work proper. In other words, the free plan service of dealers has saved many a home builder from having to employ an architect or other expert service to help him plan his home.

While all this has been going on the clayworking industry has been well enough informed about it and has been slow in taking up with this idea, notwithstanding it is plainly a result bringer, partly because of a desire to work in harmony with the architects, and partly because manufacturers of brick and hollow tile have not in the past taken the same keen interest in the subject of house plans and home designing that has been manifested by the lumber industry.

There is an open question of whether or not either architects or contractors have any reason or excuse to complain of the enterprise of the lumber folks in this connection. Surely it has not deprived contractors of anything, but has often made more work for carpenters and contractors, who have not manifested enough initiative and enterprise on their own part to stimulate new building like this has been done by enterprising lumber dealers in co-operation with manufacturers and their associations who have helped promote these home plan and home building ideas. Protest against things of this kind is protest against enterprise and progress, and the better idea is that which seems to have been started by architects, and that is to get busy and get into the game themselves.

There are many who desire to build small homes and to have something unique and original, yet they do not feel able to afford the services of a high-priced architect. Therefore, if the architects can get together and furnish on a reasonable cost basis plan service that is in keeping with the needs and that will not be considered burdensome in cost, they will not only create business for themselves, but they will help in promoting better home building in the future as well as stimulating more of it.

With brick in high favor for the foundation, parapet walls and piers of porches, it ought to be easy to push good clay tile for porch flooring, and this is a good field to keep busy on.



HARROP CONTINUOUS TUNNEL KILN.

By Ellis Lovejoy.

The Harrop kiln illustrated in Fig. 195 (plan), Fig. 196 (cross section), Fig. 197 (side view showing furnaces), and Fig. 198 (temperature curve), has several new features in car tunnel kiln construction and operation.

The kiln is a simple direct-fired tunnel type with staggered furnaces near the center and the fuel may be coal, oil or gas.

There are no flash walls in front of the furnaces but instead the aim of the construction is to direct the combustion gases from the furnaces among the ware by deflecting walls which also serve as radiating surfaces.

The circulation of the gases among the ware in the heating up zone is simply and effectively attained by alternate off-sets in the side walls, by battering these walls vertically and by drop arches in the kiln crown. Gases will flow into free areas and hot gases rise to the crown space. The alternating free areas in consequence of the recessed side walls cause the gases to follow a sinuous horizontal course in their

drift back to the discharge end in the upper part of the kiln, while the in-going air is an under current in the lower level of the tunnel. This unsatisfactory air movement is counteracted by introducing the cold air horizontally under the crown by means of a metal inner crown sheet annular with the crown and several inches below it. The air fan has several functions: To introduce air into the tunnel for cooling and secondary combustion; to put the cooling air under the cars; to force air through a duct on top of the kiln for primary combustion use in the furnaces or to be admitted to any part of the kiln for any purpose.

The draft fan is at the charging end of the kiln and connects with the kiln through an under cross duct with vertical ducts to horizontal ducts in the side walls at the car deck level.

There are a series of ports in these horizontal ducts which enable the operator to remove the gases practically at the discharge end or at any point in the length of the ducts. This is a provision for adjustment in the kiln operation to adapt it to the need of the ware in the early stages of the



Figure 195

passage to the draft ports, passing, in part at least, from one enlarged space in the kiln wall across the tunnel to the next following open area in the opposite wall and repeating to the end of the staggered wall construction.

As the gases rise into the crown space the battered wall construction increases the resistance and thus retards the upward movement; in other words, the gases are squeezed downward and inward among the ware, and any gases collecting in the crown space are deflected downward by the drop arches.

The cars are sand-sealed in the usual manner and the air under the cars is introduced in jets by fan pressure.

A balanced air pressure is maintained in the tunnel proper and the under car space. This is accomplished by means of dams in the under car space which increase the resistance to the flow of the air and this resistance is measurably equivalent to the resistance of the passage of the air in the upper tunnel and thus a balance is maintained throughout the length of the kiln.

Air for cooling the ware and for secondary combustion is introduced at the discharge end of the kiln by the same fan which supplies the under tunnel air. It has been found that the hot air in the cooling end of the tunnel tends to

water-smoking period, and once adjusted no further changes are likely to be required.

The draft conditions in the kiln are controlled at the fan.

The heat curve, Fig. 198, shows practically a straight line increase in temperature through the heating up, or oxidation zone to the furnace zone, then it is held with slight variation through the furnace zone, dropping rapidly through the higher temperature of the cooling, and then slowly through the annealing section. This curve is taken from a kiln burning porcelain in which the problems of water-smoking and oxidation are far different from those in many common wares. Kilns to burn such wares must make better provision for oxidation in order that this part of the burning may keep pace with the final burning.

Professor Harrop meets this requirement by introducing a preliminary set of furnaces near the point where oxidation begins, and provides for the introduction of pre-heated air between the main furnace zone and the preliminary furnaces. The length of the kiln is increased to the extent of this oxidation section. The heat curve will have the gradual rise through the water-smoking zone as shown in Fig. 198, up to the oxidation zone, then a slow rise through the oxidation zone into the main furnace zone, followed by the quick

cooling to the annealing temperature, then slow cooling to the end. Clayworkers recognize the fact that in the majority of wares, the cooling from high temperatures to a low red heat may be done rapidly without damage to the ware, and this rapid cooling beyond the furnace zone as shown in the heat curve is accomplished by the introduction of air in this section of the kiln through flues provided for this purpose, but if the ware will not stand such treatment the air may be cut out.

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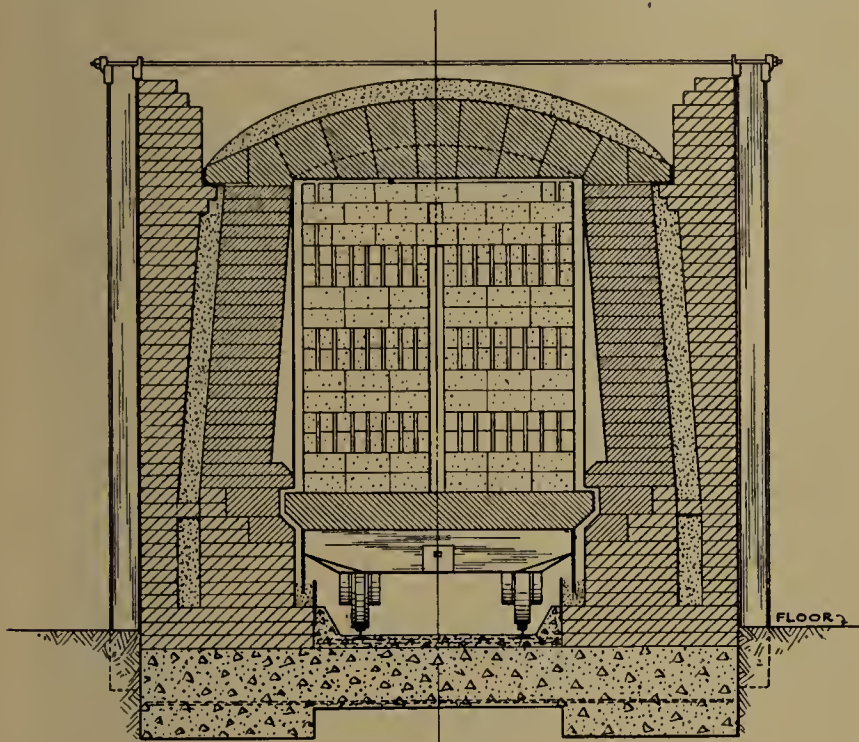


Figure 196

ARKANSAS NEWS NOTES.

THERE IS APPROXIMATELY \$3,000,000 worth of street paving and sewer construction under way in Pine Bluff, Ark., according to City Engineer Frank R. Allen. Walnut street from Barraque street to Sixth avenue will be paved with vitrified brick, at an estimated cost of \$30,000, it is said. It was stated that vitrified brick will be used owing to the fact that this street undergoes heavy traffic from loaded trucks. Fred Bennett, engineer for the project, states that a brick pavement, if laid right, probably will last longer than any other kind of pavement which might be used.

Shortage of cars has hindered brick construction over the state to a considerable extent, it is reported. Work on a \$100,000 Presbyterian church building at Forrest City, Ark.,



Figure 197

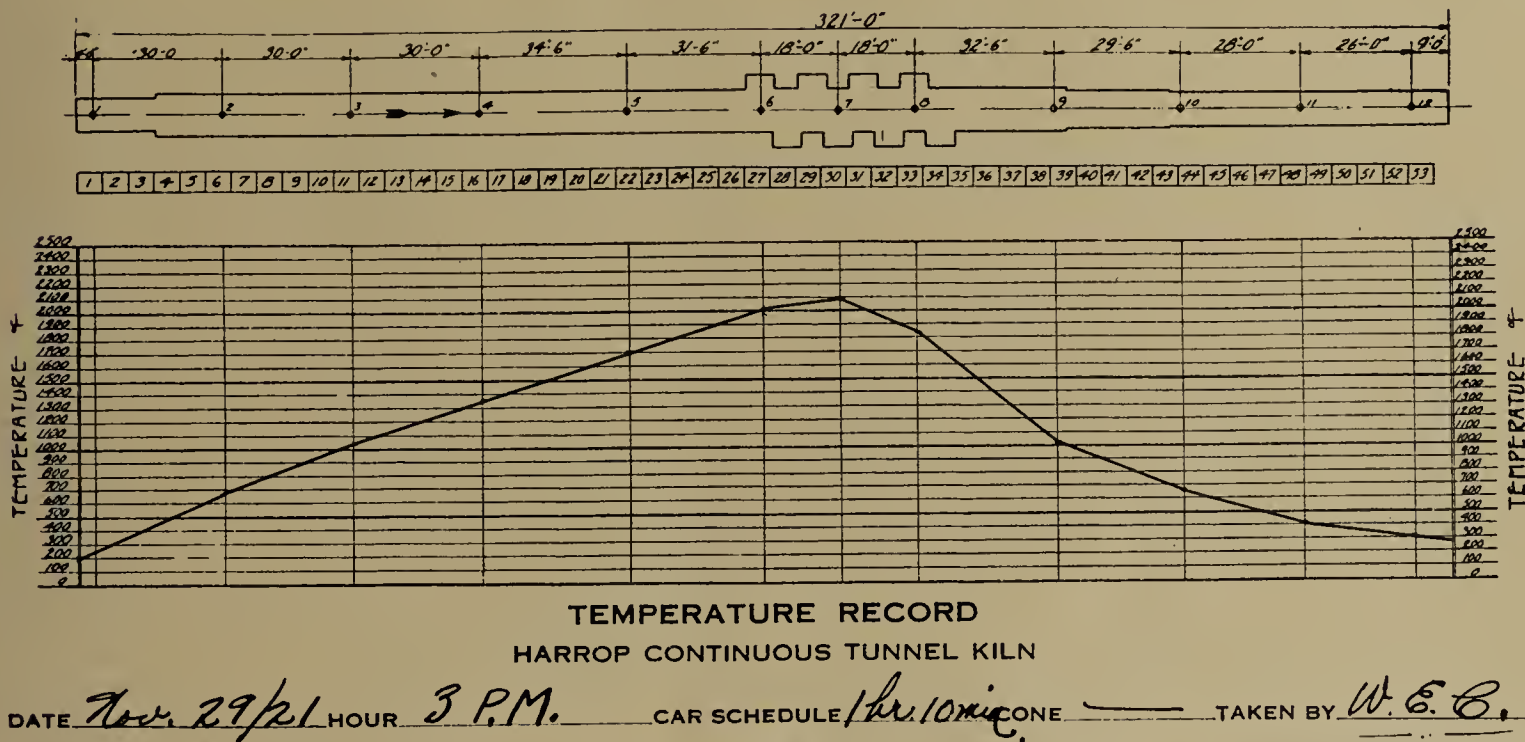


Figure 198

as will be the subsequent articles on COLORATION, DIS-COLORATION and OTHER BURNING EFFECTS to appear in subsequent issue of The Clay-Worker. These articles appear together with other additions and some revisions, in the second edition of Burning Clay Wares, now off the press.

Advertising is a good thing which the clayworkers are not doing enough of, either collectively or individually. What can we do to stimulate more investment in and better returns from publicity?

was held up because of car shortage and inability to get 80,000 face brick necessary for the structure.

During the past year the Acme Brick Company, a \$275,000 concern, has completed a thoroughly up-to-date plant near Malvern, Ark., and has been busy supplying brick in that section and in other territory.

According to an industrial survey of the state of Alabama by the U. S. Department of Labor, conditions are rapidly getting back to normal in that state. There was reported a shortage of common labor, and also of bricklayers and building tradesmen.

HOW WOULD BABSON SELL BRICK?

THE MR. BABSON of statistical fame has been giving some goodly counsel on the subject of reducing waste in our sales efforts, and some of the ideas and suggestions put forward by him raise an interesting question of how he would set about it if he was given the job of selling the output of some brick plant.

Being a statistical man here is how he would likely start. He would first lay out a definite border line of territory to be covered, then he would get busy at compiling statistics of that territory. He would probably first seek for building records of several years past to see how much building was done and of what different kinds and how much in the way of brick entered into these building operations. These figures once collected and compiled would give him a fairly clear understanding of the average or nominal requirements in the territory in the way of brick.

Logically there should go along with these some other figures as to production to the number of brick industries in the territory or serving the territory, how much they produce a year and how the production compares with the annual consumption, and what percentage of it each of the competing industries has had a habit of getting. Mr. Babson's theory of efficient selling as set forth in his articles on this subject is that when your sales efforts are based on a statistical knowledge of your customer's business, then you can make those efforts intelligent, get more results with less cost and energy, and meantime have a fairly positive knowledge of what you may expect and when.

After getting the statistical data suggested above his next step would perhaps be an inquiry into financial conditions among the prospective customers in the territory. He would seek to find if they had had a prosperous year and were flush with money, or if they had had a bad year from some cause or other and were hard up. If some showed flush and others lean, then naturally he would expect a better percentage of business from those in his territory who were prospering and who were in better financial condition to erect new buildings and carry on improvements.

Finally then he would likely turn his attention to some statistical data in the matter of changes taking place in the class of building material being used. Detailed figures covering the building records of several years would likely give a clew to whether or not brick was gaining ground and growing in the percentage of material furnished for a given volume of building operations. A charting of the rate of growth would give a fair clew to the annual normal increase in the consumption of brick which might be expected with the average volume of building operations.

This perhaps is a sort of general outline of how Mr. Babson would go about the job of selling brick. And there is no question but what the ideas would be good and fruitful of results. To be even better, however, they should lead to other things, to experimental research and development, based on knowledge of the superior qualities of brick as a building material. Here is where the statistical ideas might not help so much, but they surely furnished a good background for work. The more a man knows in the way of positive facts about the building and building prospects in his community and the financial conditions of those who should be doing more building, the better he is prepared to go out and successfully push aggressive ideas in promoting the sale of brick for building operations.

The brick industry is in a position here rather peculiar to itself, and different from general merchandising, in that it has great opportunities for expansion in the future, even though there is no great increase in the annual volume of building.

There is the matter of evolution toward better buildings which it is not so easy to chart statistically, but which is full of promise and opportunities for those who go out aggressively to spread the doctrine of the best building material on earth.

And, as just stated above, a good way to prepare for an earnest campaign of brick selling is to ask yourself how Mr. Babson would go about selling brick, then get busy at compiling and putting in definite form such statistical information as you think he would insist upon having as a ground work for intelligent salesmanship.

PRIZES FOR SEWER PIPE IDEAS.

THE COLLEGE OF INDUSTRIES at Carnegie Institute of Technology, Pittsburgh, announces a prize contest for the best papers written on the subject of "The Use of Vitrified Clay Pipe in Plumbing Systems," the contest to be open to plumbing experts, instructors and students. Prizes to the amount of \$250 will be awarded on April 15, 1923.

According to the announcement, the contest has been arranged to further the interest in reducing the cost of plumbing installations, and to assist the industry to become better acquainted with the development and use of vitrified clay sewer pipe. The money has been made available by the Eastern Clay Products Association.

The contest is divided into three classes of competitors, as follows: Class A: those who have had experience in the installation of plumbing systems or house sewers; Class B, instructors; Class C, students in the Carnegie Institute of Technology, or other institutions of learning where house drainage is taught. Contestants are required to send in their names and class distinction before January 15 to the committee chairman, and complete papers must be in the hands of the committee before April 15.

A first prize of \$100 will be awarded for the best paper in all classes; a second prize of \$50 will be awarded for the second best paper in all classes; a third prize of \$50 will be awarded for the best paper in the class which did not receive first or second prize. If first or second prizes are awarded in one class an additional prize of \$50 will be awarded, so that two-third prizes of \$50 each will be given in each of the remaining classes.

The Contest Committee consists of Professor S. E. Diddle, Chairman, College of Industries, Carnegie Institute of Technology; William J. Woolley, Manager, the National Trade Extension Bureau, Evansville, Ind.; John T. Morris, Director, College of Industries, Carnegie Institute of Technology; Joseph A. Weldon, Weldon & Kelly Company, Plumbing-Sanitary Experts, Pittsburgh, Pa.

All communications regarding the contest should be addressed to Professor S. E. Dibble, head of the heating and ventilating department, College of Industries, Carnegie Institute of Technology, Pittsburgh, Pa.

HEAVY CAR LOADING.

There are signs that the railway folks have carried the idea of heavy car loading to extremes, and that unless there is some reaction it may hamper transportation more than it will help. Overloaded cars result in hot boxes, bad order and in breakdowns to cars and equipment and tracks, which cause more loss and delay than is gained through excessive loading. It is about time for more of the railroads and the shippers to realize that there is a limit to this heavy loading idea and we need to observe that limit. It would not be a bad idea to keep this in mind in discussions with railway people on minimum car requirements for clay products.

Written for THE CLAY-WORKER.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



BUILDING OPERATIONS in Evansville and other towns in southern Indiana have continued active during the past month in spite of the shortage. In the city of Evansville the permits for October showed a big gain over both the months of September and August. Contractors and architects believe that there will be considerable building right along and that the only thing that may check it a little later on will be the cold weather. Considerable public building has been planned for Evansville for the next year. A new high school has been planned and the contract let that will cost over \$600,000. It will be named the Benjamin Bosse high school in honor of the late mayor of Evansville. A new Catholic high school has been planned and the congregation of St. Joseph's Catholic Church is planning to build a new church.

Many more public buildings are being planned. More brick homes have been built in Evansville this year than for many years past. The building outlook for 1923 is very bright and it is predicted that the coming year will witness more building than the present year. Many building and loan companies and real estate companies in Evansville have built homes during the past year and many more will be erected during the year just ahead. The outlook is indeed bright and brick manufacturers feel like they are over the rough places and that a good deal of prosperity is in store for them. General business conditions are improving and collections are holding their own very well. The car shortage is of course handicapping shipments to some extent and in the opinion of the manufacturers there will be no material improvement until the railroads are through moving the bumper corn crop of the country. And a little later on it is expected the railroads will be taxed to move the coal from southern Indiana. Due to the car shortage the coal mines in this end of the state are able to operate but about 40 per cent of the time. Efforts have been made to induce the Inter-State Commerce Commission to have the railroads send more coal cars to southern Indiana and some relief has been promised.

Tile manufacturers have been enjoying a good trade, but fear that they will be forced to pay a fancy price for coal during the coming winter. Brick plants during the past month have been operating on good time. The plants of the Standard Brick Manufacturing Company have been busy and the company has been shipping out brick to various states. John Andres, secretary and treasurer of the company, says the company has enjoyed an exceptionally good trade for some time past and he is optimistic over the trade outlook for the coming year. Mr. Andres feels like the backbone of the industrial depression has been broken and that things will look up from this time on.

In Evansville the various manufacturing plants are being operated on better time than a year ago and general conditions have improved to a great extent. There are fewer men out of employment now than there were at the beginning of the present year.

Fred Zahn, secretary of the Bricklayers' Union of Evansville, reports that there is still a scarcity of bricklayers in that city as many of them have gone to larger cities where the scale of wages is higher. Mr. Zahn says that it has been a hard matter to hold the bricklayers this year and that the contractors have been fortunate that they were able to go ahead with their contracts because of the shortage of workmen.

Some of the pottery plants in Evansville are still closed down owing to the strike of the potters that started about a month ago. The potters quit work following an announcement of the operative potters that their wages would be cut. At this writing no settlement of the strike seems in sight.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company at Evansville, has been elected one of the vice-presidents for Indiana of the Ohio Valley Improvement Association. Mr. Kleymeyer for many years has been a booster for Ohio river improvements and believes that when the locks and dams on the Ohio river now under construction are completed, that business along the river will boom and that the brick manufacturers along with the other shippers, will be able to get cheaper freight rates from the railroads especially from points on the Ohio river. As soon as these locks and dams have been completed it is expected a barge line will be established on the Ohio river that will connect with the government barge line on the Mississippi river at Cairo, Ill. The government barge line on the Mississippi is said to be a great success and has reduced freight rates along that river and at the same time has been a money maker for the federal government.

Work on the new bridge across White river at Hazelton, thirty-five miles north of Evansville that is being built by the Indiana State Highway Commission, is progressing nicely and will be completed some time next year. It will be one of the finest bridges in southern Indiana and will be the connecting link on the Dixie Beeline highway in Indiana.

L. A. Folsom, brick manufacturer at Boonville, Ind., who was in Evansville a few days ago stated that business conditions in his section are coming along all right and that the brick manufacturers of Boonville have had a very busy season. During the past six months a number of improved streets have been built at Boonville and some of them were constructed of brick.

Aaron M. Weil, well-known manufacturer at Evansville, who spent the summer at Atlantic City for the benefit of his health, is back in Evansville and reports that his health is better than it has been at any time during the present year.

Uhl's pottery at Huntingburg which was threatened with being closed down a month or two ago because of being unable to get coal, is still in operation and the company reports that they are no longer having any trouble in getting coal.

Clarence Schutz, president of the Best Brick Manufacturing Company at Evansville, reports the trade outlook very encouraging and he is of the opinion that the brick manufacturers of southern Indiana will have a splendid business during the coming year. The Best Company has received many nice orders during the past year and the plant has been operated steadily.

SAND-LIME BRICK REPORT.

THE CENSUS REPORT on the sand-lime brick industry for 1921 shows a product with a total value of \$1,116,797, a decrease of 32.8 per cent as compared to 1919. About half a dozen plants have discontinued operation, thus reducing the number of employes as well as the quantity of output. The number employed in sand-lime brick production for 1921 being 349, as compared with 504 in 1919. The report says that the combined output of all establishments was only approximately of the maximum capacity.

Predictions of those who have made a study of the coal trade indicate that we may expect stiff prices to hold through the first half of the winter, but that there should be some easing of prices in the latter half.

CLAY TRADE NOTES FROM GEORGIA AND THE SOUTH.



WITH THE RAILROAD strike definitely settled, and the transportation problem rapidly improving over the entire South, conditions in the brick and clay products industries of the district are considerably better than they have been in the past three or four months, with the outlook giving promise of an unusual period of prosperity for several months to come.

The strike held up building activity over the South to some extent but it has been steadily improving through October and should be virtually at normal again by the end of November. In fact, the South as a whole is doing more building at this time than it has ever done before, and the demand for brick, therefore, is considerably above the ability of the southern manufacturers to supply at this time because of the difficulty encountered in the obtaining of freight cars. This condition, however, is getting a great deal better from week to week.

During the strike a great many of the southern brick plants were either forced to shut down entirely or curtail their production to a large extent for two reasons. One was the shortage of coal and the other the shortage of freight cars. As a result of the latter trouble millions of brick were piled on southern yards and every inch of available space was taken up until the manufacturers were virtually compelled to curtail. Now, however, plants are beginning to start up again or to get their production back to normal, and the brick movement is in greater volume than it has been for many weeks. The industry should be operating at about normalcy again by the latter part of November.

With construction unusually active and every promise that 1923 will prove a banner building year over the Southeast, the manufacturers in this section are looking forward to the year as one of the best they have ever enjoyed.

Brick prices have been steadily upward the past three months, increasing on the average in common brick about 50 cents every fifteen days. As a whole common brick prices are about \$2.00 per thousand higher than they were three months ago. Face brick also is up about \$2.00 per thousand, though freight reductions have kept the price from going any higher. Hollow tile has advanced recently approximately 10 per cent. The present tendency in common brick prices, however, is toward reductions.

The export movement of brick out of the various southeastern ports has been unusually good the past month, and is also improving steadily as the freight transportation problem gets better. Considerable quantities of brick are being shipped by southern manufacturers to Latin-American countries, with Cuba a very good buyer, due to the excellent sugar year that country experienced this season. Conditions also are improving in Mexico and there is a better demand for southern made brick from that country also. The outlook for brick exporting during 1923 is very good, and it should prove one of the most successful export years in the history of the industry in the South.

The Orlando Potteries, of Orlando, Fla., according to an announcement from N. P. Yowell, president, has ordered considerable new machinery that will serve to about double the present capacity of the plant.

The Seminole Products Co. has been organized and incorporated at Jacksonville, Fla., with \$400,000 capital, to engage in the manufacture of building supplies, including brick and burned clay products. L. R. Nordquest, of Jacksonville, is

president; J. D. Mills, vice-president, and Harry W. Mills, secretary and treasurer.

John T. Sharp, of Canton, Miss., is considering the establishment there of a plant for the manufacture of brick, and is anxious to hear from manufacturers of brickmaking machinery relative to prices, etc.

The Milton A. Edgar Co. was formed recently at McIntyre, Ga., and are producing clay from valuable deposits they control near that city for use in the manufacture of tile, porcelain, china ware, etc. M. A. Edgar, of Edgar Brothers Co., of McIntyre, which has operated for the past twenty years in the production of clay, heads the new company as president. G. E. Todd is named vice-president.

Walden & Massengill is the name of a new partnership formed recently at McIntyre, Ga., by H. A. Walden, of that city, and C. G. Massengill, of Gordon, Ga. The company owns valuable clay and kaolin deposits in the vicinity of McIntyre and are mining the product crude. Within the next few months it is planned to add a refining plant.

The Duval Marble & Tile Co. was organized and incorporated this month at Jacksonville, Fla., with a capital stock of \$10,000, and will establish a plant near Jacksonville for the manufacture of a general line of clay products, according to the charter application. Louis C. Rivas, prominent lumber manufacturer of Florida, heads the new company as president. F. E. Trapp is vice-president, and C. R. Bisbee is secretary and treasurer. All are Jacksonville men.

A general line of brick and burned clay products will be handled at wholesale and retail by the Louis C. Rivas Co., of Jacksonville, formed recently with 25,000 capital. Louis C. Rivas is president of the concern. According to the charter application the company may also engage in the clay products business as manufacturers.

F. Graham Williams, president of the F. Graham Williams Brick Co., of Atlanta, states that his company has taken over the entire production of the plant of the Bennettsville Brick Co., at Bennettsville, S. C., and will hereafter sell the company's line through its various southern offices. The Bennettsville concern manufactures two products under the trade names of Carolina Rough Texture brick and Art-Tex brick. Capacity of the plant is about 40,000 brick daily.

Official figures on construction activity in the South the past two months show Atlanta to be far in the lead of all other cities, with Memphis running second. Activity in building is expected to hold up nearly all winter and will result in a good demand for the brick manufacturers of the district during a season that is dull in other parts of the country. The outlook for the brick industries is very good.

The Southern division of the American Face Brick Manufacturers' Association held a general business meeting in Atlanta October 19, practically all of the southern members being in attendance, according to B. Mifflin Hood, president of the Hood Brick Co., Atlanta, and vice-president of the association. The fuel situation was discussed and the general business outlook, which the manufacturers agreed was better than it has been in years. No further trouble from the fuel shortage is looked for, and most southern plants now are able to secure all the coal they need.

A new plant for the manufacture of brick is to be established this year at Palatka, Fla., by R. W. Lyle, of that city. A site has already been secured. The plant is to employ about 75 or 80 workers.

The Keeling-Cassidy Brick Co., of Atlanta, has moved from the quarters it has occupied in the Candler building since its organization two or three months ago, to larger quarters at 234 Peachtree street, Atlanta. Complete display and sales rooms are maintained at the new quarters. G. W. Keeling, head of the company, advises they have recently taken on the distribution in this district of the lines of the Brick & Tile Corporation, of Atlanta, and are licensed to make the Heath tile by the Heath Unit Tile Co., handling distribution also in the Atlanta and southeastern territory. **GEORGIA.**

DO YOU ALWAYS AGREE WITH THE BOSS?

BE IT SAID in the very beginning—that all of us have a boss. With some it is an executive of the firm; with others the employer himself; and with still others the dear but exacting public.

So to begin with we all start out on the same ground. However, for the sake of graphicness and clearness let us call the boss by the definite name of Burton.

This will require us to make a re-statement of our caption or title, and to make it read "DO YOU ALWAYS AGREE WITH BURTON?" And by the way, let me tell you an interesting story which, strange to say, is true, but you know truth is stranger than fiction.

In a certain town there is a business man who began in a very small way with a borrowed capital of a few hundred dollars. He has prospered amazingly, being the head now of an organization consisting of a dozen or more influential retail stores. Naturally his own time has to be used entirely in planning, buying, organizing, etc. Each store has its managers and assistants.

Our friend whom we will call Burton, has the reputation of being very irritable even to the point of being cantankerous and unreasonable. He is quick, sarcastic, and sometimes gives the impression of being willing to brook no opposition.

It so happens, that recently he has had occasion to locate the best man he could find to handle a big, new proposition which he is launching at large expense. Burton knew that he could not afford to make a mistake. A mistake might even be fatal.

He went on the still hunt in his own way and finally narrowed down to between two men. Each one seemed to have equally strong claims for the position, and yet he could not bring himself to come to an actual decision between them.

Burton decided that they should cast the vote themselves, and determine the matter. He called Brown to him (Brown was one of the two men) and stated to him a business situation which had just arisen.

Brown listened sympathetically and said:

"Well, well, Mr. Burton, what are you going to do about it?"

Mr. Burton had baited his trap for this very query. So with much show of impatience he explained how he was going to get out of the emergency, and in no uncertain terms he blamed a local business man for being largely responsible for the unexpected turn of affairs.

Brown nodded his head gravely and said with a fine show of deference:

"You are right, Mr. Burton, ab-so-lute-ly right! A weaker man might handle this matter in a less firm manner, but you have the right idea of settling the affair once and for all."

Mr. Burton appeared much gratified at this concurrence of opinion, and Brown went out well satisfied with himself.

In a short time the other man, whose name is Hayes, was called in. Exactly the same statement was made and the trap baited for the same question.

Hayes listened intently and when the pause came where his question would fit in, he said tersely:

"Do you wish my opinion, Mr. Burton, or have you determined on your own course?"

The boss shrugged his shoulders.

"As I see it," he said, "this is about what I shall do"—and he went on and outlined the same method of procedure which he had described to Brown.

Hayes listened with evident concentration. When Mr. Burton finished he asked this question:

"Now what do you think of my plan?"

"I am sorry to have to disagree with you," replied Mr.

Hayes courteously, "but it seems to me that such a course involves large risks. You have about an even chance of losing and winning, but as I see it in the last analysis, you will lose anyway because you will antagonize people whose good will it is important to preserve. The expense will be heavy, the burden of proof will be upon you, and the anxiety and publicity will be a heavy drain upon time and nervous vitality. I would counsel diplomacy, and if possible arbitrate the matter in a spirit of all fairness."

Mr. Burton flew right off the handle as it were. He was explosive in his denunciation of such advice, but Mr. Hayes was firm, saying deferentially:

"I may be wrong, Mr. Burton, but at least I am honest in telling you just how I see this. Here is a suggestion which I have to make, and I think you will agree that it is safe at least. Do not throw down the gauntlet at once. Go up and talk this whole matter over frankly with Mr. West, president of the First National Bank. You do not even bank there, but he is a friend of yours, and so you can depend upon him to be disinterested and I believe honest. He is also a friend of this business man against whom you are about to proceed, and this business man does not bank with Mr. West either.

"Put the matter up to one who is credited with being a shrewd financier and possessed of excellent judgment, and see how it appeals to him. Even then I would say, act according to your own best light, for I do not believe in being swayed by everyone—but at least be as reasonably sure as is humanly possible before you go ahead, that you are not making a mistake."

Two days later Billie Hayes was called into Mr. Burton's office and offered the position which he did not know was being created, and he was offered it on the ground of honesty and courage in being able to differ from the boss when he felt that the wrong policy was being pursued.

There are people who differ with everybody on principle. They love to argue better than they do to eat, but the sort of arguing they do is unresultful and tends to prejudice. There are others who agree with everybody and everything. They call it tact. It is nothing of the kind. It is either mental laziness, banal toadying, or stupid and slavish desire to curry favor.

Everyone respects those who have honest opinions and who do thinking enough to have constructive suggestions to offer. Anybody can say, "That's so. You are right." Anybody can find fault and criticise, but it takes people of real mental calibre to have opinions of their own which are worthwhile. These are the ones who are bound to forge ahead if they keep their own heads and have a definite goal in sight.

DISCOURAGING EARNEST OFFICIALS.

IT IS BEGINNING to look like when an earnest business man gets into any official position in government affairs he soon meets with discouragement and feels moved to get out again and back to business. It matters not whether it is a Dawes, a Hoover, or some other earnest business man with real ideas, they generally strike a snag and encounter so much red tape and so many difficulties of one kind and another that they soon become discouraged. There is a reminder of this in a hint that Secretary Hoover is to resign, and evidently one reason is the discouragement over his earnest efforts to get the coal industry on a better business basis. No matter, though, what the exact reason in any given case, it is a fact worthy of special notice that many good business men when they get into some active governmental position or office meet so many discouraging things that they are soon ready to quit. Plainly this means there is something wrong about our government affairs that should be set right.

THE BEATEN PATH TO QUALITY.

Big Shipments of Clayworking Machinery Sent to China and India Required Twenty-Two Cars.

EXCELLENCE KNOWS no mileage limits for its market and so it is not surprising that the "Built Right Run Right" line of clayworking machinery has found its way to all parts of the world. Some wise individual who believed in quality avers that if you make a better article the world will wear a pathway to your door in order to avail itself of the advantages of the better kind. Years ago when we selected the motto, "Built Right Run Right," it was as much a standard for ourselves to build up to as it was a promise to the clay trade of the world that, so far as was humanly possible, our line of machinery would be all that could be asked. Surrounded by the best engineering staff—conversant with the needs of the clay trade, we have done more than

ment and the plant when ready to operate will be by far the most modern in all of that great country.

And so the fame of the "Built Right Run Right" line spreads around the globe and always there is that assurance of quality of machinery which is an insurance against troubles and which makes the matter of distance from the source of supply less important because a few standard repair parts will give a plant ample assurance of uninterrupted operation.

If Bradford, Penn., can forget the repair parts which they ordered and which they thought they would need, but never used, why can't Constantinople, Buenos Ayres, or Tokio feel safe in installing the "Machinery Which Never Disappoints." In fact there is only one safe thing to do no matter whether you are located on the other side of the world or right next door, and that is to buy the quality which promises least trouble and which has won by its record the position of trust it occupies.

The two pictures herewith shown are the two complete



Fourteen Cars of "Built Right, Run Right" Clayworking Machinery Shipped to India.

our part toward bringing out machinery of a greater capacity and a higher quality. The world has truly worn a pathway to our door but we have kept pace with the demand by factory extensions and there may be no fear of crowding the path.

Just a short while ago we loaded eight solid cars of clayworking machinery for China and it is by this time well on its way toward the Orient. China had heard of the better quality and after sending emissaries to the United States to investigate, the order for this Oriental clay plant found the pathway to our door and by the time the new building season opens in the United States, away off there in China there will be a modern American plant ready to turn out the quality clay products for the Chinese that are being turned out in many of the plants we have equipped nearer home.

The Chinese order was only well on its way when another big shipment of "Built Right Run Right" kind of clayworking machinery was loaded and shipped and this time it was for India. There were fourteen full cars of the India ship-

ment and the plant when ready to operate will be by far the most modern in all of that great country.

If the "Beaten Pathway to our Door" is unknown to you, just notify us and we will send a road map—or a guide.

—American Clay Magazine.

UPS AND DOWNS OF PRICES.

ONE OF THE interesting things the statistical experts are demonstrating to us is that it takes prices longer to decline from a given peak back to normal than it does to rise up to the peak. Figures on this compiled for other war periods indicate that on the whole the period of decline is practically twice the length of increase up to the peak.

We may interpret this to mean that while the general trend in brick prices may be downward for several years, the movement will be much slower than was the upward climb following the end of the war.

The main trouble with periods of decline is that when prices start to decline buyers hesitate and hold off and business slows

down, whereas when the prices are tending upward the buying is inclined to be a little more liberal until that high peak is reached which brings the reaction.

Brick prices are very stiff as the busy building season draws to an end, and the prices for opening the season next spring should be largely determined by production cost during the winter.

PACIFIC COAST NEWS.

ONE OF THE big things in San Francisco during the month of October was the California Industries Exposition. From the 7th to the 28th, ever increasing crowds thronged the big Exposition Auditorium, to view the numerous exhibits, not only attractive but highly instructive. Food and fruit products, candies, toys, etc., were liberally exhibited; besides various mechanical products, carpet sweepers and the like.

Art in Clay.

One of the most enlightening and attractive displays in the Industrial Exposition was that of Gladding McBean & Co., installed under the supervision of W. O. Raiguel. Their presentation of garden pottery in a large and convenient alcove was a work of art in arrangement, workmanship, and concep-

perfection of imitation of various fruits both as to color and as to form was simply marvelous. One could but ask, "How can it be done in clay?" There were lemons and oranges, grapes and figs, apples and pears, peaches and plums, persimmons and pomegranates, bananas and pineapples, all mellow and ripe enough to eat. On the whole, the exhibit was one to suggest the uses of terra cotta for permanent ornamentation, as well as for structural work, in a manner and in ways that most people had not much considered.

The latest great projected structure of the city is now in the architect's hands. This is a 17-story office building for the Pacific Gas and Electric Company, to be located at the corner of Market and Beale Streets. It, together with the Matson Navigation Company Building, whose 16-stories of steel ribs are now stretching up into the air, will occupy the entire frontage of the Market Street block between Beale and Main Streets, and the two will form one of the most striking towers of masonry in the city. The main exterior features are the first story arcade with high central arch entrance, a plain and simple shaft with colonnades at the top. The arrangement of the windows carries vertical lines to the top, accentuated by the surmounting colonnade, and broken only by the cornice above the colonnade. The building will be class A in every particular, of steel, concrete and brick, and with an exterior of terra cotta surmounting a base of



Train Load of "American" Clayworking Machinery Shipped from Bucyrus to China.

tion. A beautifully shaped fountain, perfectly enameled, flanked on either side by corner pyramids of vases and jars filled with ornamental shrubbery formed a wonderful background that was a display in itself. The table in the center presented a top of beautiful natural variegated color with a malt finish; supported at either end by pedestals of highly ornamental design of the same terra cotta material. Against the wall on either side were harmonizing garden seats and pedestals. Flower boxes, pots and vases, big and little, were there in tasteful arrangement as to size and color. There was displayed a wide range of colors in unglazed, dull glass, and high luster enamels. Some shapes were adapted to polychrome, others to natural unglazed colors, and the huge oil jars were beautiful in either. Warm gray and buff enamels showed up against the green and the shrubbery. And a sprinkling of Chinese Blue and splashes of color like a Jacob's coat or an artist's pallet gave variety and touch to the whole. A neat fire place on either side, and well placed Madonnas and Bambini in old ivory and Della Robbia blue gave the final touch.

But the most brilliant and perfect products of workmanship and art, a challenge to the uninitiated, to the artist and the workman alike, were the large polychrome fruit baskets. Not only were the baskets perfect in themselves; but the

granite, and the first floor and upstairs corridors largely finished in marble. Special features are an assembly hall on the first floor, holding 500 people; employes' lunch room, rest rooms, library, and conference rooms on the 16th floor; all mechanical equipment on the 17th floor; parking for automobiles in the basement; and forced ventilation for the lower floors, to avoid noise and dust. The P. G. & E. will make use of the entire 120,000 sq. ft. of floor space. This will make one of the biggest terra cotta jobs of the city. The Gladding McBean Company are furnishing the terra cotta for the Matson Building, and say they do not intend to lose the contract for the P. G. & E. Building by any manner of default.

The West Coast Porcelain Manufacturing Company are pleased to report that their workers have concluded to continue at the old scale. The strike that was scheduled for the first of November having been called off. They employ about 100 men at their plant at Milbrae. The only other plant affected is that of the Pacific Sanitary Manufacturing Company, employing about 750 men at Richmond, Cal. The general pottery workers' strike does not affect any plant in Northern California.

The Homer Knowles Pottery Company has a force of men at work, rapidly completing the manufacturing plant. Carpenters, finishers, and cement workers are all busy at once hurrying the buildings to completion.

Written for The Clay-Worker.

ALABAMA BUILDING NEWS.

THE LARGEST brick structure that has been announced in Birmingham for many months past is the proposed Altamont Hotel, which will be begun in this city about November 1, according to an announcement by the McConnell White & Terry Real Estate and Insurance Company, which will act as rental agents for the property. When completed the family hotel building will represent an investment of \$1,300,000.

The building will be of brick and concrete with modern convenience, a bath or two for every apartment, of which there will be 100 of four to six rooms, besides a generous sprinkling of bachelor apartments. The building will be located at the corner of Iroquois street and Highland avenue, in the heart of the most fashionable residence section of the city.

Brick vs. Frame Buildings.

Echoes from the debate held before a meeting of the Montgomery (Ala.) Builders' Exchange for the purpose of deciding for all time the moot question of whether brick construction or wood construction is the best and most economical are still being heard on all sides from the members of the association.

A prominent lumberman the other day called to his friend the brick man: "Say, I understand they have located the hut in which King Alfred was housed." "Is that so," says the brick man. "Well, you know, they are still digging up complete cities where Babylon stood and they were just made out of sun-dried brick, anyway." The brick man throws up his chin like he had scored a knockout, but the lumberman comes back with: "Well, you know, they did not have any good Southern pine in those days, if they had it wouldn't even be buried." This sort of thing goes on every day in the good old town of Montgomery, the capital of Alabama. Statistics are quoted at random, the most wonderful man ever heard. Southern pine is shown to be, beyond a shadow of doubt, the most wonderful of all construction materials; brick are shown to be the best used in all history, and so it goes.

The question that was debated is: "Resolved, that the modern brick residence is more economical than the modern frame residence." The three judges decided that it was a draw as presented by the speakers.

J. M. Jenkins, president of the Jenkins Brick Company, and Frank Rhoades, of the Excelsior Brick Company, stood up for the affirmative, and Henry D. Pyron, of the Foshee Lumber Company, and James Gorrie, of the Gorrie Lumber Company, the negative.

Figures flew hot and fast in the debate and wide discrepancies were noted in the statistics quoted by both sides. Mr. Pyron estimated the cost of a brick residence as being 50 per cent more than a frame, stating that a frame house that cost \$6,000 would cost \$9,000 if built of brick. Mr. Jenkins quoted bids made by independent contractors of Montgomery which showed that the cost was only approximately 8 to 10 per cent more.

In bringing home his point Mr. Pyron said: "A frame residence costs \$6,000, a brick residence to equal it would cost \$9,000. This makes an initial saving of \$3,000. If this money is placed at interest for fifteen years the frame house man will save \$6,000, or the entire original cost, after deducting such repairs as are necessary on the wood house and not on the brick structure."

The frame house debators stated that at least half as much painting had to be done on a brick house as on a frame dwelling, and quoted statistics to show that the woodwork on a

brick house decays more rapidly. They sought to prove that practically all other finishing work was more expensive on the brick dwelling, also. Such as, plastering, etc. They would not concede as much depreciation as the brick men claimed. Mr. Pyron stated: "A frame house which was recently burned only showed 10 per cent depreciation in 12 years, according to figures made by the insurance company."

The brick men claimed that their house was warmer in the winter, cooler in the summer, costs less to keep up and lasts longer. They pointed out the saving of coal in the winter, the lower insurance rates.

The lumber men brought out pictures of old dwellings, one showing that occupied by Paul Revere, said to have been built 150 years ago. The brick men insisted that the lumber of today was not so good as that in Paul Revere's time, overlooking for the moment their own "sun-dried" argument from ancient Babylon.

The beauty of the two types was discussed at length. Neither side yielding one jot to the other in the contention that their own particular favorite was by far the most beautiful.

The judges retired and returned in less than five minutes with the verdict that the debate was a draw. The result of this decision is that all the lumbermen and all the brick manufacturers of the city are still hard at the debate. As one contractor remarked: "There seems to be little sleeping in brick and lumber circles of Montgomery, they are all boring into the past for statistics. They should have asked me to start off with and I would have told them, they are both all right in their place and either one is a rather poor substitute for a home, without a little of the other."

Announcement has been made of the purchase of the Rome Brick Company of Rome, Georgia, by the Mifflin-Hood Company of Chattanooga. The deal represents a transfer of approximately \$200,000.

The brick manufacturers of Chattanooga report capacity production and several of the companies have plans under consideration for expansion of their plants.

The plant purchased by the Mifflin-Hood Company will be operated in the manufacture of common and face brick and has a capacity of approximately 40,000 brick per day.

PRICE OF BRICK IN BUENOS AIRES, ARGENTINA, S. A.

The Direction of Navigation and Ports has been authorized to purchase 200,000 machine-made bricks from the Administration of Sanitary Works, to be employed in different constructions projected by the former dependency. The price of the bricks will be \$45 per thousand.

THE WORD "CERAMICS" HAS AT LAST BEEN MADE USE OF BY A GREAT RAILWAY SYSTEM.

Saskatchewan, Canada, no doubt holds the unique honor of recently having a station thus named, probably the first instance where the word has been similarly used in history. We are all familiar with such names as Clay City, White Earth, Brickburn, Clayburn, Kaolin, etc., but now we can hear, "All out for Ceramics."

Near the southwest corner of Saskatchewan is an extensive belt of white clays, suitable for yellow ware, stoneware, terra cotta, sewer pipe and refractories; during the past nine months one hundred and seventy cars of clay have been shipped from one station in the above locality. In consideration of this, and of the ultimate economic importance the clays of this district will bear to the country, the Canadian Pacific Railway has very wisely and properly selected the word "Ceramics" as a fitting name for the station.

BEAUTIFUL, DURABLE, AND FIRE SAFE.

STRUCTURALLY, brick is the soundest possible building, according to John H. Black in "The Home Beautiful."

The statement is based on the convenient size and form of brick and its adaptability to the craftsmanship of the master mason. Built into a solid wall fabric, the fire-hardened texture of the bricks enables them to submit to the heaviest pressures and to withstand both the attacks of flame and the corrosions of weather.

"From an artistic point of view, brick can make as strong a claim to your consideration," says Mr. Black. "An endless variety of color tones and textures are offered for your choice. Your wall can be a uniform shade or a blend of colors of the utmost delicacy. Best of all, the colors last, for they are an integral part of the enduring brick.

Brick Homes Enduring.

"From the economic standpoint, the merits of the brick lie in the reduction of depreciation and upkeep. There is a saving on maintenance, on insurance rates, on fuel and even on doctor's bills. Brick do not decay; they require no paint, their depreciation is practically nil, they make a tight wall that saves fuel and a sanitary one that prevents vermin.

"For sentimental reasons your sense of satisfaction in having a substantial and attractive house, of justifiable pride and self-respect in possessing a home of distinction which your friends and neighbors admire, is a sort of imponderable value really worth more than money. Certain types of construction, typical of the gray-brick homesteads of Kentucky or the stiff primness of the Boston town house, are rooted very deeply in American traditions.

"How a real economy results from building a face-brick home has been repeatedly shown from actual figures obtained in all parts of the country during the last ten years. We have the actual bids for 1919 in our files for reference. As frame construction is usually the cheapest, we shall take it as a basis for comparison and give the percentages of brick in excess over frame."

TABLE OF DIFFERENCES

	Frame,	Brick	Stucco,	Brick on	Solid
	pct.	veneer,	pct.	tile	brick
		pct.	pct.	pct.	9-inch
					wall
					pct.
1910	0.0	6.9	2.9	10.7	9.1
1913	0.0	5.9	4.0	...	8.1
1915	0.0	4.9	1.6	...	6.9
1919	0.0	4.9	0.3	6.2	6.4

"Your brick house costs you from a twentieth to a tenth more than the less substantial structures, but it lasts twice as long and remains in better condition. The same brick house costs far less than the heavier and more pretentious structures, and yet lasts as long, rivals them in substantial appearance and dignity and excels them in the range of artistic effects. No other material approaches brick in structural and artistic value—permanence, comfort, safety from fire, economy and beauty."

THREE BRICK PLANTS IN BIG MERGER.

By means of a big merger recently effected the brick plants at Port Matilda, Snow Shoe and the Centre Brick and Clay Co., at Orviston, Pa., will be combined with a large corporation known as the Central Refractories Co., with headquarters at Newark, Ohio, and all will resume operations within an-

other month, it is stated. All these plants have either been shut down or operating only part time.

The Central Refractories Co. have a large plant in Southern Ohio for the manufacture of fire and building brick. They wanted a larger variety of brick as well as high grade Pennsylvania fire and silica brick for their trade. By this merger they hope to operate all these plants under one management and sales force, which will give them the desired production at less expense than if all the plants are under individual management.

STRIKE INJUNCTION FOR STREATOR BRICK CO.

The temporary injunction secured by the Streator (Ill.) Brick Co. prohibits members of Local No. 7, United Clay and Brick Workers from threatening, intimidating, molesting or in any way interfering with their workmen or with the operation of their plant, where there has been a strike since January 1, when the company put their factory on an open shop basis.

The injunction also prohibits the union workmen from calling the non-union men, or the members of their families "scabs," or vile names.

Mr. Plumb's petition alleged that at times since his plant started operating on an open shop plan, from five to thirty pickets have been stationed on Bloomington street, where his company employes pass going to and from their work, and six pickets have been stationed on the Vermillion bridge at times. He recites an instance where two pickets threatened to throw two of his workmen into the Vermillion river if they did not cease work.

The brick company was incorporated for \$80,000. Mr. Plumb in his petition states that they are unable to operate to an advantage because the union men threatened and intimidate the non-union workmen, and unless they are prevented from doing so his company stands in a position to lose large sums of money.

WANTS CLAY PRODUCTS PLANTS.

Business interests of Frostburg, Maryland, have launched an advertising campaign through the columns of The Clay-Worker to acquaint the manufacturers of face brick, sewer pipe, and other clay products with the unusual advantages possessed by that community as the location for industries of this character.

For more than fifty years fire brick have been manufactured at Frostburg and they have an enviable reputation with the trade; no other products were made until recently when one company has been successfully manufacturing rough tex brick and also hollow tile.

Owing to its geographical location with respect to the big eastern markets Frostburg enjoys a decided advantage in freight rates over points in Ohio and further west. The town is also the center of a tremendous coal field, making fuel cheap and always easily obtainable. The veins of clay frequently lie just below veins of coal.

R. T. Stull, Supervising Ceramist of the Bureau of Mines at Columbus, Ohio, made a thorough inspection of the clays of this section recently and pronounced them admirably suited for the manufacture of face brick in buff, grey, and other shades; sewer pipe, building and drain tile, fire-proofing, sanitary ware, stone ware, etc.

Much valuable data has been collected by the Frostburg Commercial Club on the locations and types of the various clays; this data will be furnished any one interested in investigating this section.

That fellow they call "Bloc" seems to be something of a farmer as well as a power in politics.

NEW BRICK AND TILE COMPANY AT CLEVELAND, OHIO.

Well Known Men of Experience in the Business Organize the Target Brick and Tile Co.

WHAT PROMISES to be far reaching in its possibilities, and of great interest to the building public of Cuyahoga county, is contained in an announcement of the launching of a new brick and tile company in Cleveland, to be known as the Target Brick and Tile Company.

The organizers are W. A. Fay, who was president and general manager of the Cuyahoga Builders Supply Company; C. M. Eberling, a former building contractor and inventor of many brick and tile-making machines; Robert C. Mitchell, president and general manager of the Mitchell-Beville Company; John M. Beville, for many years connected with the local brick industry and at present vice president and sales manager of the Mitchell-Beville Company, and Frank F. Gentsch, a Cleveland attorney and actively connected with various institutions directly interested in the building welfare of Cleveland.

In discussing the new organization, Mr. Fay gave it as his opinion that the next ten years will prove the most active period in the history of Cleveland's building program, and that present production will be inadequate to supply the demand of the immediate future.

According to Mr. Beville, the new organization proposes to establish immediately three distributing points, so located as to reduce to a minimum the important item of cartage, and it is also planned to operate on a sixteen-hour basis, if necessary, in order to supply the anticipated demand.

Many architects, engineers and builders have been approached for an expression of opinion and they agree there is a great field for additional competition in the local market. They have found from experience that during a normal rush season the demand far exceeds the supply, and for this reason, they say, they welcome the new company.

Mr. Mitchell stated that due to the modern machinery to be used by the Target Brick and Tile Company, up-to-date sales methods and perfected deliveries, prices will at least be kept from soaring any higher, and that in all probability they may be reduced to something like those existing in a great many other large cities, thus creating greater activity in the construction of small homes and apartment houses. In this way only, said Mitchell, will the public find relief from present high rents.

In commenting on the future of the new concern, Mr. Gentsch stated they were prepared to build other plants just as rapidly as the demand might warrant, and he also intimated the present organization might expand to take in other branches of the building material business.

Offices of the company are located at 1814 Cleveland Discount building, and it is the hope of the organizers to have production under way in time for the spring building season.

RESEARCH WORK.

A special bulletin of the Chamber of Commerce of the United States tells us that American industry is spending \$70,000,000 annually in scientific research work, and as a result is saving or gaining about half a billion dollars a year.

The record indicates that about half of the sum is spent by manufacturers in laboratory research work, while the balance is expended in experimental and development work in plants.

Incidentally, too, it is pointed out that it is through trade associations we should get a correlation of this work, which makes practical the pooling of resources and the carrying out

of plans and ideas not found practical for individual manufacturers.

The clayworking industry has been doing its share of this in co-operation with various branches of the government in research work for years, and there is no doubt of the good results. What we should get out of the present review of the progress of industrial research work is inspiration to keep carrying on, to do more and better research work for the industry in the future, and spread out with it and include commercial studies as well as technical studies of manufacture.

CHANGE IN THE OFFICIAL FAMILY OF THE N. P. B. M. A.

Edward E. Duff, Jr., newly-elected secretary of the National Paving Brick Manufacturers' Association, will assume office on or about January 1st. Maurice B. Greenough, retiring secretary, will become associated at that time with Mr. W. M. Lasley, of Chattanooga, Tenn., in various enterprises, including the manufacture of paving brick.

Mr. Duff comes to the National Association particularly



Edward E. Duff, Jr., Cleveland, O.

well fitted to assume charge of the increasing activities. Following several years of experience in railroad engineering with the Pennsylvania Railroad he spent several years in municipal engineering and management at Sewickley, Penna. When the United States entered the war he was commissioned and served for two years with the A. E. F. in France as Captain of Engineers. This, with his subsequent experience as field engineer for three years with the Eastern Paving Brick Manufacturers' Association, places him in a position where he can be of service in the street paving and highway construction field as well as in the paving brick industry.

Mr. Duff is a graduate of the Department of Civil Engineering of Carnegie Institute of Technology where he was awarded the degree of B. S. in C. E. in 1913, and in 1917 the degree of C. E. He is an associate member of the American Society of Civil Engineers and a member of the American Society for Municipal Improvements, the Society of American Military Engineers and the Engineers Society of Western Pennsylvania.

The man with good principles is mighty likely to have good policies in business.

Written for The Clay-Worker.

IN THE PHILADELPHIA BRICK MARKET.

BRICK IS STILL IN GREAT DEMAND, although the winter season is about to set in which will necessarily have a tendency to slow up production. Brickmakers announce that they are working at capacity, and will continue to do so as long as it is possible to turn out brick. And it is necessary to work at capacity to fill all demands. There are many jobs still waiting for brick deliveries, and builders are doubling their efforts to get their operations enclosed before the snow is on the ground.

Efforts are being made by the Philadelphia Building Congress and several other construction organizations in this city to stretch this city's "one hundred days of building" into a longer period, thereby putting more seasons in construction, and also helping to eliminate the seasonal unemployment, which begins to siege the city at this time. The first named organization is now making surveys, and it is believed that with all hands helping that a comprehensive program will be put in operation that will materially help all lines of the industry.

The Structural Service Bureau compiled a theoretical table of possible days' work obtainable in Philadelphia by bricklayers, which shows that the possible days worked in one year was 182. An ordinance of Philadelphia regarding laying of brick in mortar while the temperature is at freezing or below is much more rigid than in most cities. The bureau arrived at the average by covering a forty year period.

D. Knickerbacker Boyd, architect, who has probably made more intensive searches concerning labor in the building industry, thinks a central bureau should be established, through which, voluntarily, all construction programs should be cleared, including national, state, municipal and private work in the territory. As an example, if a man wanted some inside bricklaying done, it would be better to have it done in the winter time, rather than the summer, as it will leave the man free to do work which must be done in the summer. In that way local production would be encouraged, rail hauls shortened, traffic congestion lessened, a constant labor survey could be maintained to the advantage of employer as well as employe, good management promoted, efficiency encouraged, apprentices attracted to the trades, educated and properly trained and increased production would result.

The City of Brick Homes.

This city, which is now a city of brick homes, there being more than 400,000 at the beginning of the year, is swiftly bringing up the total, and Philadelphia is making her claim as the "City of Homes" much stronger. Since the beginning of the year, permits have been issued by the Bureau of Building Inspection for the erection of 8,600 houses to cost \$44,000,000. During the same period of last year, the total was only 1,780. The total for all classes of construction will reach much more than \$100,000,000 for the year. For the ten months it was \$95,496,950, which represents the beginning of 19,836 operations. The majority of the dwelling permits call for two story houses of brick construction and the efforts of the builders to give something different has developed in many cases in the erection of four or five different types of brick dwellings within an area of two city squares. Brick predominates, with stone and stucco a very poor second.

There is every indication that 1923 will be a busy year, and many architects report plans in progress for many large structures. The Cunningham Piano Company announced that plans are being made by Andrew J. Sauer & Company for a fifteen story office, sales and warehouse building at 1312 and

1314 Chestnut street. The building will be of brick and steel and will cost about \$1,000,000. The Insurance Company of North America bought an additional piece of ground at Sixteenth and Arch streets, and is having plans made for a twenty-story brick and stone office building. A Victory Hall Building, to be erected on the Parkway and to cost \$5,000,000, will not get under way. Politics was playing an important part in it, according to all indications, and the sponsor of the movement, who thought that every barrier had been passed, failed to note that such a project had to come up before a body of judges. This body squashed the whole plan, one reason being that there are many other things in Philadelphia that could be done instead of putting \$5,000,000 in such a project. Such action has won the approval of the people.

These are only a few of the projects in the hands of architects, and practically sure of going ahead. With such an outlook it is only natural that the brickyards would be working to capacity for some time to come.

A QUAKER.

COAL SILO STUFF.

ONE OF THE noticeable features of progress in the coal industry is in the equipment of retail coal yards with storage bins and coal handling equipment so that coal cannot only be handled mechanically, but so that it can be properly stored and can be loaded out promptly either in the yard's own delivery truck or in the trucks and wagons of farmers who come for their own coal.

It is an interesting fact that much of the coal storage bin work now is taking on silo form. Coal yards build silos for coal storage. Some are built of wood, some of concrete in monolithic form, and others of concrete slabs, and best of all some splendid coal silo bins are being built of hollow building tile of a general type and pattern used for building farm silos.

Illustrative of what is being done and what can be done one enterprising firm, the Kalamazoo Tank and Silo Co., of Kalamazoo, Mich., takes advertising space in a prominent retail coal paper, where it illustrates and features the Kalamazoo glazed tile for coal bins. This is not only good advertising directed toward a good field, but it is illustrative of possibilities in new fields of development in the hollow building tile industry which should be sought and cultivated.

ANOTHER GOOD IDEA GONE WRONG.

There is evidence in some recent findings of the railway wage board that there ain't no such thing as a living wage basis from which to determine compensation of workers. And about the same time there comes reports from Austria of a following of this cost of living idea in adjusting compensation which has increased the pay rate something like 2,000 per cent. As a matter of cold fact, those who are trying it are finding out that the living wage idea as a basis for compensation is fallacious, because there is no such thing as an established or standardized basis for cost of living.

Something of this same idea has been back of the effort to have set up minimum wage laws in various states, and the trouble with it is there is no definite ground for a foundation. It is like many of our fine theories and utopian ideas; when we go to hitch it up with practical experience there is really nothing to hitch to.

Russia has demonstrated the fallacy of many utopian ideas and now we are demonstrating some more along this line in this country. We still have, though, quite a share of fine spun theories and utopian ideas which sound beautiful, but don't work out worth a cent. And it is about time for us to begin looking at these things in a hardheaded manner instead of doing so much costly experimenting where sound judgment ought to tell us there is nothing to experiment with.

CHICAGO'S THIRD "OWN YOUR HOME" EXPOSITION.

NEARLY ONE HUNDRED organizations and trade associations representing all branches of the building materials industries have been invited to co-operate and participate in Chicago's Third Annual "Own Your Home" Exposition to be held at the Coliseum, March 24th to 31st, 1923.

The Exposition this year will be held under the auspices and direction of The Chicago Real Estate Board, the oldest and largest real estate board in the world, in co-operation with the real estate boards of Oak Park, Evanston, Harvey, North Shore and DuPage County. Under these auspices and with this powerful backing the success of the Exposition is assured.

Among the organizations in the brick and clay products field to whom invitations have been extended are: American Face Brick Association, Chicago Common Brick Association, Chicago Face Brick Association, Clay Products Association, Hollow Building Tile Association, Illinois Paving Brick Association, National Clay Products Industries Association.

The officers of these organizations have been asked to appoint a committee to represent the clay products industry and to arrange for educational exhibits demonstrating the advantages of brick and clay products in home building.

"In taking over the direction of the 'Own Your Home' Exposition, the Chicago Real Estate Board has for its ideal, the staging of a great educational exhibit presenting all phases of the home building industry," said John R. Magill, President of the Chicago Real Estate Board. "It is not to be a real estate exhibit in any sense, as only a comparatively small amount of floor space has been allotted to the Real Estate Division. The Chicago Real Estate Board, however, is planning an elaborate display visualizing the advantages of home ownership."

Mr. William Zelosky, one of Chicago's largest sub-dividers and home builders, has been named Chairman of the Committee of Administration of the Exposition.

BRICKS.

IT WAS THAT canny Hoosier philosopher, Will H. Hays, who said, in an address the other day, "Lay bricks, not throw them."

He wasn't talking about Ireland, either.

If all the bricks that have been thrown since the world began were collected they would reach, it is conservatively estimated, ten million times around the earth.

If some of our ancient ancestors working on the Tower of Babel had laid bricks instead of throwing them, we would all be speaking the same language today. And that would sure help some!

However, it isn't the throwing of clay bricks, but of oral ones, that's the most dangerous. Clay bricks may hurt heads, but the oral ones are almost sure to hurt hearts.

A little tolerance goes a long way. It's easy to criticize someone else's job but hard to mind one's own.

Likewise it's easier to tear down than to build, which is mighty hard work. But oh! the joy which comes with creating—and the aching emptiness that accompanies destruction.

Don't worry about the credit. Emerson says, "Men suffer all their life long under the foolish superstition that they can be cheated. But it is as impossible for a man to be cheated by anyone but himself as for a thing to be and not to be at the same time."

An ounce of co-operation is worth a pound of obstruction; an ounce of smoothness a pound of friction. And these are

the mortar which securely hold the bricks in the business and social structure.

What Emerson said of enthusiasm, "Nothing great was ever accomplished without enthusiasm," is equally true of co-operation, for co-operation and enthusiasm are the brick-laying twins.

Let's be enthusiastic, not envious; let's boost, not boast; let's construct, not confuse; let's think before we speak. In short let's "lay bricks, not throw them."

THE A. F. B. A. ANNUAL.

Eleventh Annual Convention American Face Brick Association, West Baden, Ind., December 5, 6, 7, 1922.

THE BIG ANNUAL event of chief interest to the face brick manufacturers of the nation is scheduled for the first week in December, Tuesday, Wednesday and Thursday, fifth, sixth and seventh, at West Baden, Ind. The meeting will be held in the famous West Baden Springs Hotel, which is in itself, well worth a trip across the continent. It is a remarkable structure, nothing just like it as a hotel



Eben Rogers, President A. F. B. A.

in the whole country. It is operated on the American plan and a rate of eight dollars per day will prevail.

Under new management the hotel has recently been rehabilitated and with its beautiful spring house, the interior decoration of which in tile and mosaics, is a most attractive work of art architecturally, its beautiful grounds, splendid golf course and other amusement features, make it a mecca for pleasure seekers of unrivalled excellence. Its chief distinction is its great lobby, one of the largest in the world under a glass dome. Here the brick clan can gather, talk shop and imbibe the health giving water under most delightful surroundings.

Secretary Hollowell announces that all year tourists' rates offer the delegates a round trip fare with usual stop over privileges. Special Pullman service will be provided from Chicago, St. Louis, Louisville, Indianapolis, Cincinnati and other main connecting points. As usual the Cincinnati Brick Club will be host to all the brick clan that are routed via that city. A most interesting program is promised and an unusually large attendance predicted. For full particulars those interested are requested to communicate with Mr. R. D. T. Hollowell, Secretary, 130 No. Wells Street, Chicago, Ill. Eben Rogers, of Alton, Ill., will preside as president, a position for which he is peculiarly qualified, having gone through

the chairs of the N. B. M. A. and been an active member of National Paving Brick Association and other allied organization in years past.

CINCINNATI BUILDING NEWS AND ITEMS OF INTEREST FROM ALL SECTIONS.

THE GREATEST BUILDING boom in the history of the United States now is in progress, according to figures obtained in Cincinnati by builders and real estate men. The rush to build is limited to no one city, state or section. Throughout the country the bricklayers are throwing the mud, records reveal. Cincinnati builders are informed that building records are being broken in practically all the large cities. They further are advised that residential buildings, factories and business structures lead.

In Cincinnati or southern Ohio and northern Kentucky the building boom is unprecedented, say building commissioners of the various cities and towns.

Building operations for the first nine months period, this year, in Cincinnati almost equals those of the same period of 1920 and 1921 combined.

Here is a comparison of the nine months' period for the past three years:

Year	No. of permits	Value of Improvements
1922	14,651.....	\$22,450,215
1921	12,948.....	12,536,005
1920	10,301.....	10,907,047

A comparison for the month of September for the three years follows:

Year	No. of permits	Value of Improvements
1922	1,644.....	\$2,895,510
1921	1,402.....	1,125,535
1920	1,146.....	1,021,275

The record breaking figure for August was \$2,989,185, so that the figures for September are shown to be only \$94,000 less.

Of the permits issued in Cincinnati in September 60 were for brick residences of an aggregate cost of \$505,300.70 for frame residences, costing \$365,050,214 for private garages for a total cost of \$64,875, one public garage to be erected at a cost of \$4,500, three office buildings which will run in the neighborhood of \$459,000; five warehouses for a total of \$52,450; three store buildings which will amount to \$725,000; two factories totaling \$125,000 and one bank which will cost \$30,000.

With such prospects as these brick dealers of all kinds in this section say they will be kept busy. Also, many of them declare they are receiving large orders from other sections of the country, for as they say, the building boom is everywhere.

The total valuation of buildings for which contracts were let in 21 large cities from all sections of the United States during the first nine months of this year is \$1,225,746,948, compared with \$1,087,549,255 for the entire 12 months of 1921.

Building Boom National in Scope.

Besides Cincinnati, included in the total figures are New York, Chicago, Philadelphia, St. Louis, Boston, Detroit, Kansas City, San Francisco, Pittsburgh, Baltimore, Cleveland, Los Angeles, Indianapolis, Seattle, New Orleans, Dallas, Buffalo, Minneapolis, Milwaukee and Atlanta.

The total of permits to build in Greater New York for the period of January 1 to October 1, 1922, shows an increase of \$95,231,779, over the same period last year, figures gathered in Cincinnati by experts show.

Boston citizens spent four times as much money for building this year as last. A record number of residential buildings are going up in that city.

More than 11,200 building permits were issued in Philadelphia between January 1 and October 1 of this year as compared with 9,773 last year.

Figures for Dallas, Texas, show more than 5,000 homes have been erected since January 1, 1922. Dallas already has spent more money for building in 1922 than was expended in the entire year of 1921.

In Missouri the building contracts during the month of September show an increase of 18 per cent over September, 1921.

San Francisco has spent more than twice as much for building during 1922 as for the same period in 1921.

Memphis figures show a doubled valuation of building.

A large number of costly schools has boosted Atlanta's building bill to tremendous figures, while Columbus, Ohio, has made the fastest gain in history.

Down in Wheeling, W. Va., they have built more houses, this year than appeared during the entire span of the last ten years.

The state of Minnesota has increased its building program by 22 per cent, while Denver nearly doubled its figures of last year.

Lansing, Michigan, is building at the rate of 35 per cent in advance of last year. Detroit like Cincinnati has an unprecedented increase.

Portland, Ore., has broken all building records since 1910.

Construction of 1,260 residential buildings was the feature of the building program in Birmingham, Alabama.

"Keep it up," say brickmakers, dealers and contractors.

CINCINNATUS.

CLAY NOTES.

We are informed that Mr. George Cheney of Assumption, Ill., will establish a brick and tile factory near Pana, Ill. He proposes to use the shale beds south of Pana in the manufacture of brick and tile.

The Marysville Brick Company, Marysville, Calif., has been incorporated by C. G. Munn, I. C. Evans, J. B. Wood, C. W. Marders, L. E. Hite, L. A. Williams, J. Robison, and E. E. Bryan.

The Excelsior Brick Company, Montgomery, Ala., will resume operations the latter part of the year. Frank Rhodes, the manager has been very active in rehabilitating the plant since the disastrous fire that occurred there several weeks ago. The plant will manufacture both face and common brick, capacity about 40,000 daily. A new kiln has been built and new improvements made.

The Open Hearth Fire Brick Company, 1407 Keenan Bldg., Pittsburgh, Pa., is planning for new machinery at its Freeport plant. Mr. H. O. Williams is in charge of the purchases.

The Dailey Clay Products Company of Portland, Ore., has increased its capital stock from \$100,000 to \$150,000.

The American Fire Brick Co., whose plant located near Spokane, Wash., was recently destroyed by fire will be rebuilt in the very near future. The fire loss including machinery was \$35,000.

The Better Brick Co. has purchased the Wigger tract, near Allegany Grove, five miles west of Cumberland, Md., near the National Highway and will erect a plant for the manufacture of brick, tile and other building products.

Canned Shrimp.

Lawyer—"I think I can get you a divorce, madam, for cruel and inhuman treatment. But do you think your husband will fight the suit?"

Woman—"Fight! Why, man, the little shrimp can't even come into a room where I am!"—Chicago Herald.

OFFICIAL ANNOUNCEMENT



THIRTY-SEVENTH ANNUAL CONVENTION TO BE HELD AT CLEVELAND, O., FEB. 5 to 10, 1923.

OBEDIENT TO THE expressed wish of a very large majority of the members of the National Brick Manufacturers' Association, for a meeting of the two national building brick associations during a given week and in the same city, it has been decided to hold the thirty-seventh annual meeting of the N. B. M. A. in the city of Cleveland, Ohio, the week of February 5th, 1923.

A majority of those voting, not all of the members voted, expressed a preference for Chicago as the convention city for 1923; but a still larger number expressed preference for a meeting of the two national brick associations at the same time and place and, as the directors of the Common Brick Association have chosen Cleveland for their annual meeting, we feel sure the above choice of that city will meet the approval of practically our entire membership. We also feel sure that there will be a very large attendance at Cleveland.

THE CONVENTION CITY. Cleveland is the very heart of the clay industries of the nation. The N. B. M. A. met there last in 1916 when a high record of attendance was registered, nearly a thousand being present. Since that time new hotels have been built, the city has grown immensely in every way, population, wealth and amusement features, making it one of the most attractive cities in the nation.

There is in the immediate vicinity a number of large clay-working establishments of all sorts which will be open to delegates and where up-to-date equipment may be inspected. But a few miles distant are the clay centers of Akron, New Castle and Youngstown and the homes of the leading clay machinery firms at Bucyrus, Canton, Dayton, Plymouth, Wellington and Willoughby, to which there will be pilgrimages by many of the delegates convention week.

From every viewpoint the selection of Cleveland is a happy one and an old-time rousing big gathering is sure to assemble there convention week.

WINTON HOTEL HEADQUARTERS: The beautiful Winton Hotel will be headquarters for both conventions. It is most admirably adapted for the transaction of the business and social functions of the two associations. Never have we enjoyed more sumptuous accommodations and facilities at any of the annual meetings. The convention halls and display rooms are unsurpassed and the entire equipment and service is of the highest class. Every guest room in the Winton has a bath and the rates are reasonable, from \$3.00 to \$5.00 for single and \$5.00 to \$7.00 for double rooms. Where extra guests occupy rooms with their friends, the added charge will be \$2.00 per person. There is a fine cafeteria or coffee shop that affords quick service for those desiring it, while the regular dining room service is first class in every respect. One entire floor has been reserved for the trade missionaries,

the machinery and supply dealers, and specific reservations will be made and observed. All sessions and functions will be held at the Winton. Early reservations are requested. The Union Station cars pass the door of the hotel.

THE CONVENTION PROGRAM: While there will be no intermingling of convention sessions, we are all to meet together as one happy family. The Common Brick Manufacturers' Association, will hold their sessions, Monday, Tuesday and Wednesday. The N. B. M. A. sessions will follow, beginning with the Smokerette, rechristened a Dinner Dance, Wednesday evening and the regular session occupying the balance of the week. The annual banquet will occur Thursday night.

An excellent program is in course of preparation, which,



Mayor Fred Kohler, Cleveland, O.

with further particulars relative to reduced railroad rates, etc., will be given subsequently. Those desiring further information relative to the meeting, the requisites of membership, or other details are requested to address the secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,

T. E. WILSON, President.

THEO. A. RANDALL, Secretary.

THE CITY'S GATES WILL SWING OPEN FOR BRICKMAKERS.

CITY OF CLEVELAND

Office of

Fred Kohler, Mayor

Theodore A. Randall, Secretary,
National Brick Manufacturers' Association.
Dear Sir:

On behalf of the City of Cleveland it gives me great pleasure

to extend a most cordial invitation to the National Brick Manufacturers' Association to hold their 1923 convention in this city.

I hope it will be possible for your Association to avail itself of the facilities afforded by this city in the way of accommodating conventions.

I assure you that every effort will be put forth to make your meeting a pleasant one, so far as the City of Cleveland is concerned.

Yours very respectfully,

FRED KOHLER,

Mayor.

CORDIAL INVITATION EXTENDED BY THE BUILDERS' EXCHANGE OF CLEVELAND.

Friend Theodore:

The board of directors of the Builders' Exchange, at their regular meeting yesterday, voted to extend an invitation to the National Brick Manufacturers' Association to hold their next convention in Cleveland.

We recall with much interest the sessions of your Association held in Cleveland in previous years and are pleased to say that these meetings have always proved to be a great benefit to the city and especially to the brick interests located hereabouts.

Any co-operation that we may be able to give you will be very gladly tendered.

Yours very truly,

EDWARD A. ROBERTS,

Cleveland, Oct. 20, 1922.

Secretary.

CONVENTION DATES.

December 5, 6, 7, 1922—American Face Brick Association, West Baden Springs Hotel, West Baden, Ind. Secretary, R. D. T. Hollowell, 130 No. Wells Street, Chicago, Ill.

December 12, 1922—The New Jersey Clay Workers' Association and Eastern section of the American Ceramic Society, Ceramics Bldg., Rutgers College, New Brunswick, N. J. Secretary, G. H. Brown, Rutgers College, New Brunswick, N. J.

December 12, 13, 1922—National Paving Brick Manufacturers' Association, Cleveland, Ohio. Secretary, Edward E. Duff, Engineers Bldg., Cleveland, Ohio.

January 24, 25, 26, 1923—Canadian National Clay Products Association and Western Ontario Clayworkers' Association, Hotel Connaught, Hamilton, Ont., Can. Secretary Gordon Keith, 51 Wellington Street West, Toronto, Ont., Canada.

February 5, 6, 7, 1923—Common Brick Manufacturers' Association, Hotel Winton, Cleveland, Ohio. Secretary, Ralph P. Stoddard, Discount Bldg., Cleveland, Ohio.

February 7, 8, 9, 1923—National Brick Manufacturers' Association, Hotel Winton, Cleveland, Ohio. Secretary, T. A. Randall, 211 Hudson Street, Indianapolis, Ind.

February 12 to 17, 1923—American Ceramic Society, William Penn Hotel, Pittsburgh, Pa. Secretary, Ross C. Purdy, Lord Hall, O. S. U., Columbus, Ohio.

* Announcement has not been made of convention dates for the Kentucky Clay Products Association, Wisconsin Clay Products Association, or Illinois Clay Products Association.

POTTERIES RENEW WAGE PACT.

Seven firms controlling eight plants in Ohio, West Virginia, Pennsylvania, New Jersey and California have renewed one year wage agreements causing a break in the strike of 3,500 sanitary pottery workers, according to the National Brotherhood Operative Potters. Union leaders said that two other companies operating three plants, have agreed to grant the men's demands.

MARSE JOHN W. SIBLEY AS A RADIO BROADCASTER.

BRICK AND TILE manufacturers of Birmingham and the Birmingham district say their plants are all being operated on full time, and that they have all the orders they are able to fill. These orders for brick of various kinds and various kinds of tile and silo blocks and other clay products are going from the Birmingham district to practically every southern state, while some orders are being received from Central America and Cuba.

The only difficulty now experienced by the clay manufacturers here is the difficulty of securing freight cars in which to ship their products. This is due largely to the recent strike of railroad shopmen. However the situation is somewhat improved now over what it was thirty days ago. Some of the brick manufacturers say it will likely be sixty days more before they will be able to secure sufficient freight cars in which to handle their products.

The Birmingham district and the entire south is now enjoying the biggest building boom known since the days before the world war. Many buildings of various kinds are being built all over the south, which are taking large quantities of brick and building tile. The building of roads in many sections of the south, especially in the state of Florida, is taking large quantities of brick for paving work and sewer pipe for culverts.

John W. Sibley of the Birmingham Clay Products Company, has been asked by the Birmingham Chamber of Commerce to deliver a speech on "The History and the Importance of the Brick Industry," which speech is to be cast by radio all over the country. Mr. Sibley is considered one of the greatest experts on the manufacture of brick and other clay products in the south. His company owns and operates a large brick plant at Sibley, some twenty-five miles north of Birmingham, where they also own coal mines. Their offices are in Birmingham.

The Roper-Strauss-Ferst Company, manufacturers of hollow and face tile, have just completed the shipment of two large orders of building tile to Penrtoletz and Ceiba, Central America. Both of these orders go into hospitals being built in those countries.

The city of Birmingham has just let the contract for the construction of a city market, costing \$18,000. The building will be 140 by 200 feet and will accommodate 100 stalls. The walls and the roof will be of white glazed brick, while the floor will be of red tile.

The price of all clay products is firm and holding up well, there having been no change in prices since September 1. The demand is almost equal to the Birmingham output at this time. The present price of brick range from \$10 per thousand, for ordinary building brick, to \$20 a thousand or more for face brick.

WILLSON.

ANOTHER RICHARDSON KILN AT ALLIANCE.

The face brick plants of the Alliance Brick Co. never shut down—even the recent coal miners' strike did not stop them. Their new plant, No. 2, with the Richardson Continuous Kiln, was started up in July, 1921, and has been in constant operation ever since. Plants with continuous kilns have a great advantage in fuel saving at all times, and especially during scarcity of coal.

Mr. W. D. Richardson, of Columbus, was at Alliance the first of the month conferring with Mr. Hoiles about the building of another unit, 12 compartments, of the Richardson kiln, foundation for which is now being put in and the contract let for the steel building, under which the kiln will be erected. This additional unit, with chambers a little longer than the first unit, will more than double the output of these popular brick.

Written for The Clay-Worker.

MILWAUKEE AND WISCONSIN CLAY AND BUILDING NEWS.

AFTER A LONG fight the Wisconsin Clay Manufacturers' Association has won its case before the Wisconsin state railroad commissions for a reduction of freight rates on interline movements of clay products. The sweeping cut in intrastate freight shipments of brick and articles taking "brick distance rates," on eight principal lines of Wisconsin railways is a signal victory for the brick producers of this state. Since the conclusion of the war the Badger manufacturers have sought to secure a reduction in rates which were proportionately higher than on most other freight. The cuts range from 28 per cent on distances under 25 miles up to about 10 per cent on shipments for longer hauls of from 75 to 150 miles. The rates are progressive for every five miles of the first 100 miles, and for each 10 miles thereafter up to 400, the longest distance a commodity can be shipped within the state of Wisconsin.

Railroads affected by the order are: Chicago & Northwestern and Omaha; Green Bay & Western, Kewaunee, Green Bay & Western, and Ahnapee & Western, considered as one system; The Burlington, The Milwaukee Road, Illinois Central; Marinette, Tomahawk & Western, Northern Pacific, and The Soo Line.

In addition to single rates announced, a 1.25 cent charge is added where two roads are used and a 2 cent charge is added where three roads are involved. The decision follows a similar one several weeks ago, drawn on the same lines for the movement of pulpwood within the state. Both orders affect intrastate movements only.

Consumptive requirements of clay building products in Wisconsin are reaching the period of decline, with the approach of colder weather. However, comparison with a year ago and preceding periods shows that activity is well maintained. Building Inspector W. D. Harper, of Milwaukee, estimates that building expenditures here for 1923 will total \$32,000,000, a record mark in Milwaukee's building history. Figures for the first ten months of this year show 30,873 permits were issued for \$26,839,033, which is already more than \$1,000,000 ahead of the 1921 total, which reached \$25,000,000 for the entire year, and more than double any record established before the war. During the first ten months of last year 27,444 permits were issued representing expenditures of \$21,442,403.

Railroad transportation difficulties are still an important feature in the clay products market of the state. In Milwaukee a committee to take all possible steps to relieve the car shortage situation has just been named at a meeting of more than 40 railroad representatives and traffic men at the Association of Commerce. The committee is composed of five railroad representatives and five men representing shippers. A bulletin will be issued by the traffic department of the Association of Commerce to all members, urging co-operation in heavier loading of cars and prompt unloading of cars to relieve the situation.

At Ashland paving operations have again resumed with the arrival of five carloads of paving brick. A cessation of several months in the paving work was caused by unsettled railroad conditions and the failure of the brick to arrive. Work will be continued until the weather becomes too cold. The embargo on cars caused worry at Sheboygan where work on the chimney at the city water works plant was held up for a short time, but the brick had been loaded before the embargo became effective.

The South Milwaukee Brick Company, located at Fifth and Clark Avenues, South Milwaukee, is making large addi-

tions to the equipment of their plant which will put them in a position to operate the plant almost continuously, regardless of weather conditions. E. C. Guhr and his sons, who are building up the plant, which they took over about a year ago after it had remained idle for a number of years, are extending the city water mains to the plant after using water from the lake for some time. Electric power service will be installed to replace the steam power used until now. Heavy crushers will be put in so that heavy chunks of the frozen clay may be broken up and heated with steam so that the work can go on at all times of the year, except when the ground outside is frozen so deep as to prevent it being dug up. Considerable of this machinery is now on the way from the manufacturers. A modern dry kiln, with a high degree of heat, is nearing completion. This will dry the brick under all kinds of weather conditions. The South Milwaukee Brick Company specializes on high quality of gray colored face brick.

Tiles of every description, from the ordinary agricultural to the expensively decorated type, were displayed at a special exhibition conducted by the Wisconsin Chapter of the American Institute of Architects at the Art Institute, November 2. Albert Kelsey and D. K. Boyd spoke at the public reception. Their subjects were on the use of clay tiles in modern architecture. The Wisconsin chapter met early in the month. Peter Brust presided. The members were addressed by S. R. Walker, president of the Associated Tile Manufacturers of America. E. P. Butler, Milwaukee, president of the Tile and Marble Contractors of America, addressed a meeting of tile setters and contractors. Henry Raash led a discussion on vocational guidance, apprenticeship and the spirit of craftsmanship.

A. BADGER.

BURNHAM BROS. BUILDING NEW PLANT.

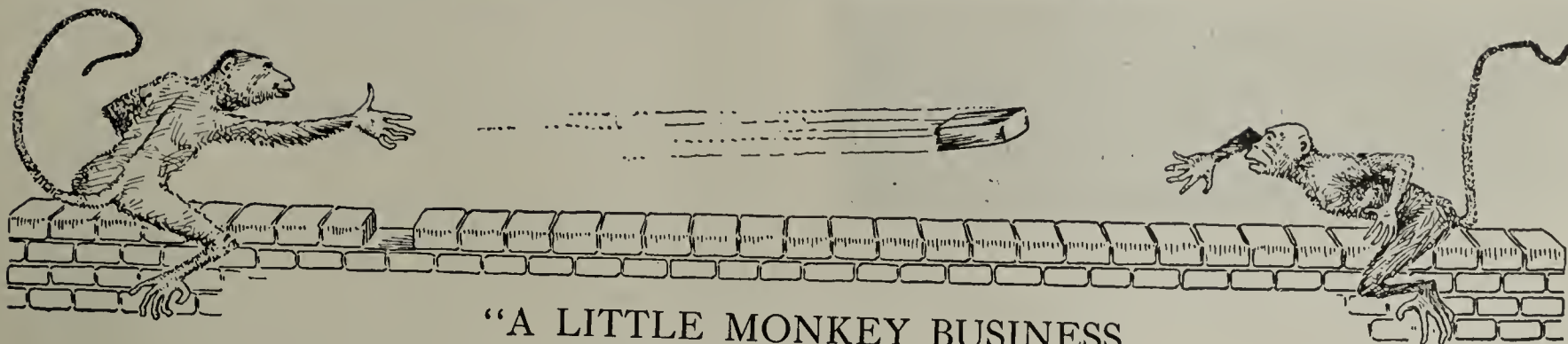
The Burnham Brothers Brick Company of Milwaukee has begun work on a new plant in South Milwaukee. The present Milwaukee plant will be moved to South Milwaukee as soon as the new structure is finished. The completion of the new building will give South Milwaukee the most modern and efficient plant in the country, providing that certain inventions in brickmaking machinery, now in process of development, work out successfully.

The present plant of Burnham Brothers is located on Kinnickinnic Avenue, Milwaukee, where the available clay supply for the making of bricks is almost exhausted. Another yard owned by the company, west of Milwaukee, was abandoned during the war. For two years past, the single plant has been found inadequate to meet the requirements of the company.

The new buildings will be erected on a tract of forty-six acres on the old Chicago road, south of the South Milwaukee limits. Meredith Brothers, Milwaukee contractors, have started work on the dryer building. The plant will consist of four buildings of fire-proof construction which will be enclosed, with the exception of the brick-burning building. It will have a yearly capacity of 40,000,000 bricks. This output will be of the famous Milwaukee cream brick, from which this city won the name of "Cream City."

It is the plan of Burnham Brothers to take their present force of working men to South Milwaukee with them in spring, at which time they expect to start operations in their new plant.

Many times lumbermen have gone into contracting and into speculative building to help create business, and it is probable that there are some instances where this might be a good idea for clayworkers to follow.



"A LITTLE MONKEY BUSINESS NOW AND THEN IS RELISHED BY THE BEST OF MEN."

She Said a Mouth Full.

"What were your father's last words?"

"Father had no last words. Mother was with him to the end."

Another "Wet."

"My daughter sprang from a line of peers," said the ardent father.

"Well," said the feller, "I jumped off a dock once myself."

Now We Know.

Mr. Gotham—"I see the smallest cows in the world are found in the Samoan Islands. The average weight does not exceed 150 pounds. They are about the size of the merino sheep."

Mrs. Gotham—"Do you suppose, dear, that is where they get the condensed milk?"

Here! Here!

The teacher of a primary class was trying to show the children the difference between the natural and man-made wonders and was finding it hard.

"What," she asked, "do you think is the most wonderful thing man ever made,"

A little girl, whose parents were obviously harassed by the questions of ways and means, replied as solemnly as the proverbial judge:

"A living for a family."

He Loved His Teacher.

A solitary sportsman, his gun under his arm, was wandering down a country lane in Inverness-shire, when he met a small boy going to school.

"I say, my boy," he remarked, "is there anything to shoot down here?"

The boy looked around for a moment, and then answered, with eagerness:

"Aye, there's the skulemaister comin' over the hill!"

WHERE THE JOKE BELONGED.

While President Roosevelt was on a certain ranch the men caught a horse thief and hung him. They soon discovered they had made a mistake and executed the wrong man.

The most diplomatic among the ranchers was selected to take the body home and break the news gently to the widow. The cowboy asked the widow, "Are you the wife of—?" She answered, "Yes."

"Well," said the cowboy, "you are mistaken. You are his widow; I have his body in the wagon. You need not feel

bad about it because we hung him thinking he was a horse thief. We soon found out he was innocent. The joke is on us."

And That Reminds Us.

Says Sam: "These slow-motion moving pictures remind me of the last hired man I had."

It Took No Sherlock Holmes.

"Shay, boss, betcha can't guess what I've been doin' s'mornin'!"

"You have been bottling my wine."—Le Journal Amusant (Paris).

Irrational Rations.

Maid: I couldn't come yesterday, Miss Jackson. I was suffering that badly with pain in my chest.

Mistress: What was it, Melissa? Dyspepsia?

Maid: Yes'm, it was. But the doctor, he calls it an attack of acute indiscretion.—Life.

A Real Frog Story.

Did Senator Taggart ever tell you about his great purchase of bullfrogs? One day at French Lick a hill-billy with an "Adam's apple" projecting far afield and running up and down his throat like an elevator, came to him and asked if he wanted to buy a lot of frogs for the hotel.

"I've hearn," he said, "that some of these peart people from the city eat them rep-tiles!" Taggart thought he might use some frogs and asked how many he had.

"I don't jist egg-zackly know, but I guess they mout be nigh onto two carloads. I'm gonna drean a ten-acre pond an' it's chock full on 'em."

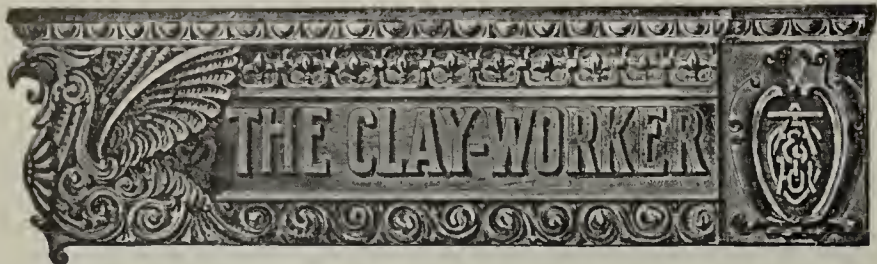
They agreed on a price per thousand for the frogs and the hotel employes fixed up a couple of big tanks in which to keep them. In about three weeks the owner of the pond appeared with a basket on his arm, in which he had just eight wretched frogs!

"This is all they was," he said grinning rather sheepishly, "but I thought from the tarnation racket they made they was two carloads of 'em!"

Elsie: Did you ever see anybody so dreadfully slow as Charlie?

Jack: Oh, I don't know. They say he plays a pretty fast game of chess.—Pearson's Weekly.

Do not wait until a machine gives way or breaks down before overhauling and making necessary repairs. Being forehanded in things of this kind and taking a stitch in time often saves expensive delays.



Entered at the Indianapolis postoffice as second-class matter.

A Praetical Illustrated Monthly Magazine, devoted to Briekmaking and allied Clayworking Arts and Industries.

THIRTY-NINTH YEAR OF PUBLICATION.

Title registered, contents copyrighted.

OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

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ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 78. November, 1922. No. 5.

CURRENT COMMENT.

Mark up that convention date.

* * *

Get busy early at your plans for winter work.

* * *

That Build With Brick slogan is still good and useful. Are you making enough use of it?

* * *

Good conveying machinery not only lightens the burden of manual labor but it helps cut down both labor and overhead cost.

* * *

Mild weather during the fall months has encouraged a continuation of active building that has made good fall business for brick and hollow building tile.

* * *

The brick man who is equipped to run right through the winter months has promise of good luck this winter because the indications are his product will be needed.

* * *

As the campaign of good road building continues it makes possible a further extension of local delivery by motor trucks and this is helping solve the transportation problem in nearby territory.

* * *

If you are not already a member of the N. B. M. A. you should certainly join and become active in the ranks before the annual convention, booked for Cleveland, Ohio, the week of February 5th, 1923.

* * *

The face features in hollow building tile have been slow in getting that recognition and attention which makes for real progress but there are now indications that the face

idea in hollow building tile will be an interesting feature of future effort in developing this important building material.

* * *

The cost of putting brick in the wall is still the big and trying problem in the matter of the final cost of brick construction.

* * *

Some of the active building may go into winter quarters, but the building boom itself seems to be gaining in strength and there are no signs of let up.

* * *

One of the best signs of the times is in improved market conditions on important crops of farm products which makes for greater prosperity in the agricultural districts.

* * *

Not only will the machinery men be at the Cleveland Convention but they will have a lot of good progressive ideas with them that should prove of value to the visiting manufacturers.

* * *

Competition enlivens trade so long as it is kept on a fair and upright basis, but when people get out with the price cutter and a reckless disregard of consequence there is danger to profit and injury to trade.

* * *

Thanksgiving comes a bit late in the month this year but we should neither be tardy nor stingy about giving thanks for the many good things that the people of this good country have been favored with during the year.

* * *

Coal is more plentiful now but at this writing the prices are not easy enough, and though there is some promise that they will be easier later on, it leaves one with the feeling that something ought to be done about this coal thing.

* * *

Another good sign of the times is that retail dealers in lumber and building material are now manifesting a keener interest in the items of brick and hollow building tile because they realize these will be bigger factors in local building operations in the future.

FUEL SAVING.

Ideas of fuel saving in the clayworking industry when properly carried out generally include improvement in the quality of the burned product as well as economy in fuel. This has been pretty clearly demonstrated by the work of the laboratory car that has been making the rounds of a number of plants, and incidentally developing some ideas for better burning and fuel economy wherever they have been. The results show that in instances where substantial savings in fuel and burning time have been made there has also been in all cases improvement in the quality of the product. This is as it should be, and since this winter considerable attention will naturally be centered on the subject of fuel economy, those carrying out these ideas should keep in mind that logically it should include improvements in the burning.

BABSON WISDOM.

One of the good sayings of Roger Babson, the famous statistician, is that the more positive knowledge you have about your business the better are your chances of success. He refers not so much to technical knowledge as specific commercial knowledge of the market prospects in your territory and the financial conditions of those who should be your customers. There is no doubt either but what this kind of knowledge is good and practical as well as technical knowl-

edge of how to produce your products. The average progressive clayworker has in the past concerned himself more largely with practical and technical information and progress than with merchandising methods. Now it is in order for us to include a more definite study of merchandising, because salesmanship is essential to continued successful production.

CONVENTION PLANS.

Now that the date has been set and we know that the 37th annual N. B. M. A. Convention is to be held at Cleveland the week of February 5th it is not only in order to mark up that date on your calendar but it is time to be making plans and thinking about the things you want to say and to hear said at this great gathering. It means that while the Executive Committee of the association is at work making plans for this great occasion you should also get busy, not only on your personal plans for going and for getting the most out of it for yourself, but it is a part of your duty also to offer any suggestions to the Executive Committee which you think may be helpful in their plans for making the convention the greatest one that so far has been held.

THE INTEREST IN ELIMINATION.

There is a pretty general and widespread interest now in the process of elimination of useless sizes and varieties in clay products and we are getting some splendid results. The Department of Commerce some time ago created a Department of Simplified Practices and put Mr. W. A. Durgin in charge, and he has been doing some splendid work in co-operation with the many different industries.

The first conspicuous effort and its results are found in the work of elimination of unnecessary sizes and patterns of paving brick. This, though, is just the beginning and not the end of the work. The Hollow Building Tile Association is busy doing something of the same kind in that industry. The American Face Brick Association is manifesting an active interest, and brick manufacturers in general have been at work on this standardization problem for years, and naturally are glad to have the co-operation of this department for more positive standardization and further elimination wherever it is practical. The drain tile people, the sewer pipe people, and practically all specific divisions of the clayworking industry are manifesting an active interest in this matter of elimination, which speaks well for future progress in economy and better understanding.

There is no question but what the elimination of unnecessary sizes and patterns will make for economy in manufacture less confusion in the use of products and more profit to the industry, as well as better prices and more satisfaction to the consumers.

DECLINE IN WOOD BUILDING.

Some here and there have gained the impression that there has been more frame construction this year than usual, and this means that the people are not turning toward more permanent building material as they should. There has been, too, some local instances of large use of frame construction during the year, but the records of the Forest Service furnish an interesting story which between the lines points a decline in wood building. A bulletin of the Forest Service says there has been a decline in the per capita consumption of lumber from 500 board feet in 1906 to 316 board feet in 1920. The Forest Service sees in this a permanent growing use of other building material, and it is well this is so, too, because we have been cutting our forests faster than we have been growing new trees.

Therefore, it is high time that for the future welfare of our wood working industries we turn to brick and other building material for structural purposes.

As a matter of fact, the change is even more pronounced than these figures would indicate. There has not been any decline in the consumption of lumber for furniture and other wood working purposes. Indeed, it is the other way around, and the consumption requirements of most furniture factories, planing mills and other wood working institutions has increased, and to the extent they have increased it adds to the evidence of decline in the use of lumber purely for structural purposes.

So no matter what the figures may show in one locality or people may say about the return to lumber because of the high cost of building the actual facts are that there is a steady decline in the consumption of lumber for building purposes and a corresponding increase in the use of brick, hollow building tile, cement and steel.

FARM CONDITIONS BETTER.

The general upward trend of prices has included with it as an important factor better prices on farm products, and as a result the agricultural districts are now in a better shape financially than they have been for two years. Credit for some, perhaps quite a lot of this, must be given to co-operate marketing and a general getting together on the part of farmers. The main thing we are concerned with now, however, is not so much how it was brought about, as the fact that farmers are getting in better shape financially, which should mean more improvements and better opportunity to sell clay products. It should make conditions much better for drain tile during the winter months, and should furnish opportunities for selling brick and hollow building tile for farm use both for home buildings and outbuildings in larger quantities than heretofore.

WINTER WORK.

The clayworking industry has perhaps never had a better opportunity than will be presented this winter to develop the idea of putting the industry as nearly as practical on a year-round basis. There is a better chance than usual for good returns from winter work this year because building activities have consumed most of the surplus product, and in the main there will be needed all the clay products for building material that can be produced during the winter. Therefore, it is time to see whether or not or to what extent it is practical to keep the clayworking plants going through the winter months.

Some plants are already prepared for winter running, others can prepare for it by a little effort and expenditure, but there are some where actual winter work will be difficult if not impractical. It is a good time to survey your plant and the possibilities of continuing work either all through the winter or during as much of the winter time as possible.

In those parts of the country where there is not much hard freezing it should be practical for many plants which heretofore have shut down when the bad weather of winter comes to keep going, perhaps not all the time, but quite a percentage of the time during the winter months. It is largely a matter of studying the layout and the winter weather conditions and planning accordingly.

This should be the first thought of the whole industry as winter comes on to see how much in the way of good winter running it may be practical to do this winter. The next thought should be that of what in the way of changes and improvements may be carried on during the winter months so as to have things in the best practical shape for an early start

in the spring. Neglect of equipment or neglect to make improvements and changes during the winter months makes for delays and extra cost in the spring. Even where it is not practical to keep the plant running through the winter months, there is some good work which can be done which will bear fruit by putting things in better shape for the spring start.

The first idea, however, with everyone should be that of looking into the plant equipment and surroundings to see if it is practical by proper effort to keep running and producing through most of the winter months. The more regular work we can keep going on during the winter months the better shape we will be getting the industry in.

THE BOOK OF SMILES.

The optimistic editor of the Book of Smiles, proves himself the "real stuff" in the varied mirth-provoking selections which make the current issue a most readable booklet. The first of the lot might be taken seriously with great advantage by some of the all too ready letter writers, who figure in the eternal triangle.

Lives of great men
All remind us,
As their pages
O'er we turn,
That we're apt to
Leave behind us
Letters that we
Ought to burn.

A copy of current issue, telling all about the merits of the Standard Steam Brick Drier, can be had for the asking. Address the Standard Dry Kiln Co., 1547 W. McCarthy St., Indianapolis, Ind., as per ad on page 436.

CHAS. J. ANDERSON ENLARGES PLANT.

Chas. J. Anderson of the Chas. J. Anderson and Son Co., Marinette, Wis., writes stating that his conveyor business has been so good that they are as a necessity impelled to increase the capacity of their shops. Additional ground has been purchased and a two-story building, 36 by 75 will be erected in the very near future.

NEW CORPORATION TAKES OVER BANNER CLAY WORKS.

The Banner Clay Works, of Edwardsville, Ill., has been taken over by a new company and is being operated under the firm name of Edwardsville Shale Products Company. Conrad F. Nystrom is the general manager. The company was incorporated by Frank Fromeyer and C. W. Meyers of St. Louis, Conrad F. Nystrom, Galesburg, C. W. Terry, Charles E. Gueltig and M. D. Powell of Edwardsville. Mr. Fromeyer is president, Mr. Meyers vice-president and Mr. Powell secretary-treasurer.

MORTAR COLORS FOR FILLING STATIONS.

The Sinclair Pipe Line Company is erecting many pumping stations throughout Illinois, Kansas, Missouri and Oklahoma, for which the Ricketson Mineral Paint Works, Milwaukee, are furnishing the mortar color, thus assuring a permanent non-fading color for the setting off of the brick to the best advantage.

The good standing and the future welfare of the clay-working industry depends upon those engaged in it taking a prideful interest in the quality of their products that will insure keeping them up to standard.

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STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,

required by the act of Congress of August 24, 1912, of The Clay-Worker; published monthly at Indianapolis, Ind., for Oct. 1, 1922.

State of Indiana, County of Marion, ss:

Before me, a notary public in and for the state and county aforesaid, personally appeared Theo. A. Randall, who, having been duly sworn according to law, deposes and says that he is the editor and business manager of The Clay-Worker, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

That the names and addresses of the publisher, editor, managing editor and business managers are:

Publisher, T. A. Randall & Co., Inc., Indianapolis, Ind.

Editor, Theo. A. Randall, Indianapolis, Ind.

Managing Editor, none.

Business manager, Theo. A. Randall, Indianapolis, Ind.

Owners are T. A. Randall & Co., Inc., Indianapolis, Ind.; Theo. A. Randall, T. B. Randall and Jas. E. Randall, Indianapolis, Ind.

Known bondholders, mortgagees, and other security holders holding 1 per cent. or more of total amount of bonds, mortgages, or other securities: None.

That the two paragraphs next above, giving the names of the owners, stockholders, security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

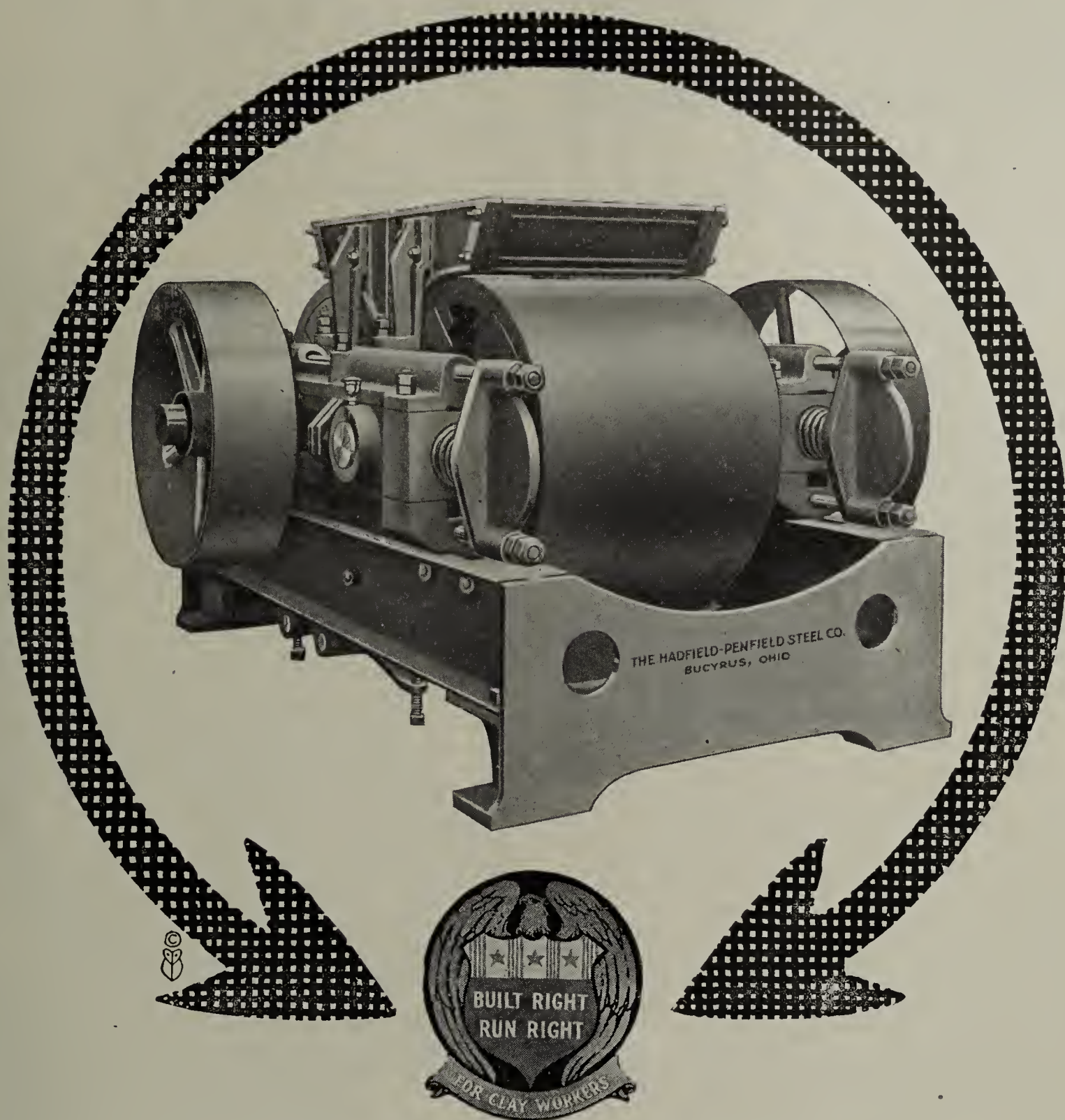
(Signed) Theo. A. Randall, Editor.

Sworn to and subscribed before me this 27th day of Sept., 1922.

(Signed) CHRISTA A. LEWIS, Notary Public.

(Seal)

My commission expires June 30, 1925.

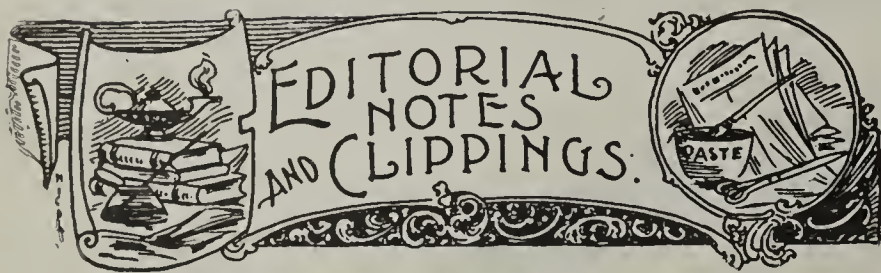


AMERICAN NO. 266--A CRUSHER.

A glance at the cut will indicate to the discerning and careful buyer that here is a crusher of more than ordinary quality. It is built to serve and it does it, not only in the quantity and quality of the material coming from it, but also in lowering the cost of operation and lessening, repair troubles. This Crusher was designed for grinding plastic clay which carries too much moisture to permit dry grinding and screening. It is substantially built in every detail and is designed for long and hard service as well as large capacity. Get Bulletin No. 266 which gives a complete description of this great Crusher.

The Hadfield-Penfield Steel Co., Bucyrus, Ohio

Formerly The American Clay Machinery Co.



The Bolivar Clay Products Company, Bolivar, Pa., has resumed operations after a shut down.

W. C. Craig of Brownsville, Texas, is going to erect a brick manufacturing plant near Robstown, Texas.

The Burnham Bros. Brick Company, of South Milwaukee, Wis., is building a new drier, dimensions of which are 85 by 100 feet.

The El Paso Brick Company, of El Paso, Texas, has plans under way for the complete electrification of its plant to include the installation of a power house.

The Lake Erie Brick & Tile Company of Leanington, Ont., Can., has been incorporated with a capital stock of \$100,000. Earl C. Aurey, Harold F. Willson, and Elsie Durden are the incorporators.

The Alton Brick Company, manufacturers of high grade face brick, announce that they have moved their St. Louis, Mo., office to enlarged quarters, Suite 1407-08 Chemical Bldg. They invite all interested to visit their new display room.

The B. Mifflin Hood Brick Company of Atlanta, Ga., is reconstructing the plant of the Rome (Ga.) Fireproofing Company, which it purchased some time ago. It will be used for the manufacture of hollow building tile and impervious light face brick.

The Salina (Kan.) Brick & Tile Company has shut down its plant until spring, due to car shortage. They have two and one-half million brick on hand with rush orders being received daily, but the car situation is such that the company deemed it advisable to stop production.

The Ohio Clay Company, Cleveland, Ohio, has just let a contract for the erection of a Harrop continuous tunnel kiln for burning hollow building tile. The American Encaustic Tiling Company of Zanesville is getting ready to install a second continuous tunnel kiln of the Harrop type.

Chas. J. Anderson, who manufactures and installs the Anderson conveyors made by his company, the Marinette Iron Works, Marinette, Wis., informs us that he has installed conveyors at Cohoes, N. Y., Watervliet, N. Y., Lebanon, N. H., and Portland, Me., and is now setting one up at Hartford, Conn., for Michael Kane Brick Company. A number of other orders

in that vicinity will keep him busy for several months to come.

Work is progressing rapidly on the new eleven kiln plant of the Owens China Company, at Minerva, Ohio.

E. Bertram, attorney, Monticello, Ky., is in the market for a soft mud brick machine of about 10,000 to 12,000 capacity. He is planning the erection of a small plant at his place.

The Sanford Brick Company of Southold, N. Y., has been incorporated by C. L. Sanford, president; F. S. Sanford, vice-president, and L. N. Sanford, secretary and treasurer.

At the meeting of the stockholders of the Standard Brick Company, Crawfordsville, Ind., subscriptions amounting to between \$125,000 and \$150,000 of a proposed half million first mortgage bond issue was subscribed.

Cuba, due to an excellent year's business in sugar is doing considerable building and buying brick in large quantities. There has been a steady betterment of export movement of brick out of the southern parts of Cuba.

Three new kilns were added lately to the Zanesville, Ohio, plant of the Mosaic Tile Company, which is at present experiencing one of the best years in its history. The company purchased a plant at Mattewan, N. J., and all eight kilns of the new plant are now in operation.

The Robinson Clay Products Company, Akron, Ohio, has purchased a tract of land adjoining the plant at Parral, Ohio. Officers of the company state that no plans are under way for immediate use of the newly acquired tract, but that it would probably eventually be used in expansion of the Crown plant.

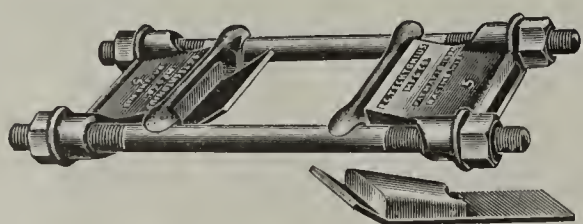
About the largest single order for brick that has ever been placed in Cambridge, Md., was secured by the Cambridge Brick Company, of which Hilton L. Longnecker is proprietor, the latter part of October. The order was from a Washington contractor and called for three quarters of a million red brick.

John H. Fritzinger has purchased the factory owned and operated by the Kesco Clay Products Company, at Piscataway, N. J. The factory has been in the hands of a receiver and news of early resumption of operation was glad tidings to the former employees. Mr. Fritzinger states that the plant will manufacture hollow tile exclusively.

The Stiles and Reynolds Brick Company suffered a \$15,000 loss October 23rd when a fire damaged to that extent their brick plant at Berlin, Conn. Mr. Reynolds was on the scene and praised the firemen for their efficient handling of the situation and credited them with saving a new \$45,000 drier. The plant is being operated. The loss was partly covered by

(Continued on page 488)

Tecktonius Kiln Band Fastener



Gives Permanency to Kiln Construction

Insures Safety to Kiln Contents

Wrought Iron Bands

Crown Covers and Ventilators

Write for

Discount and Net Prices

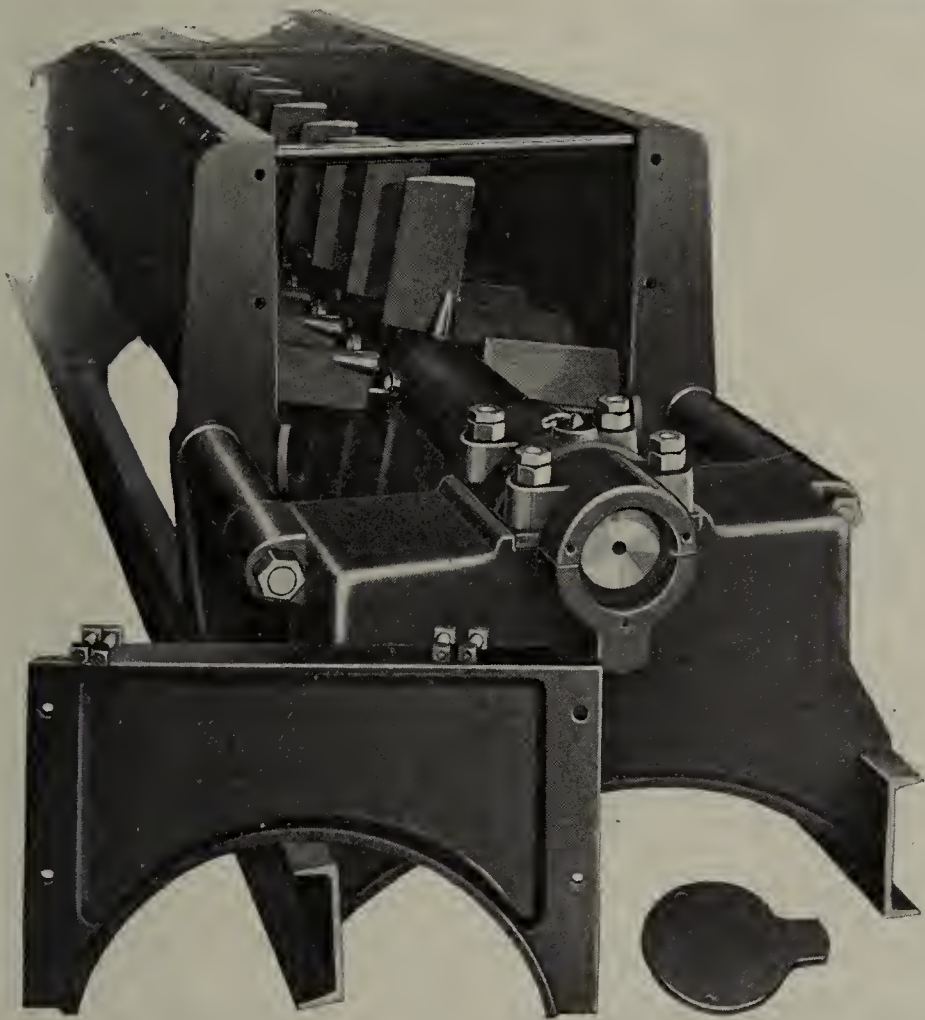
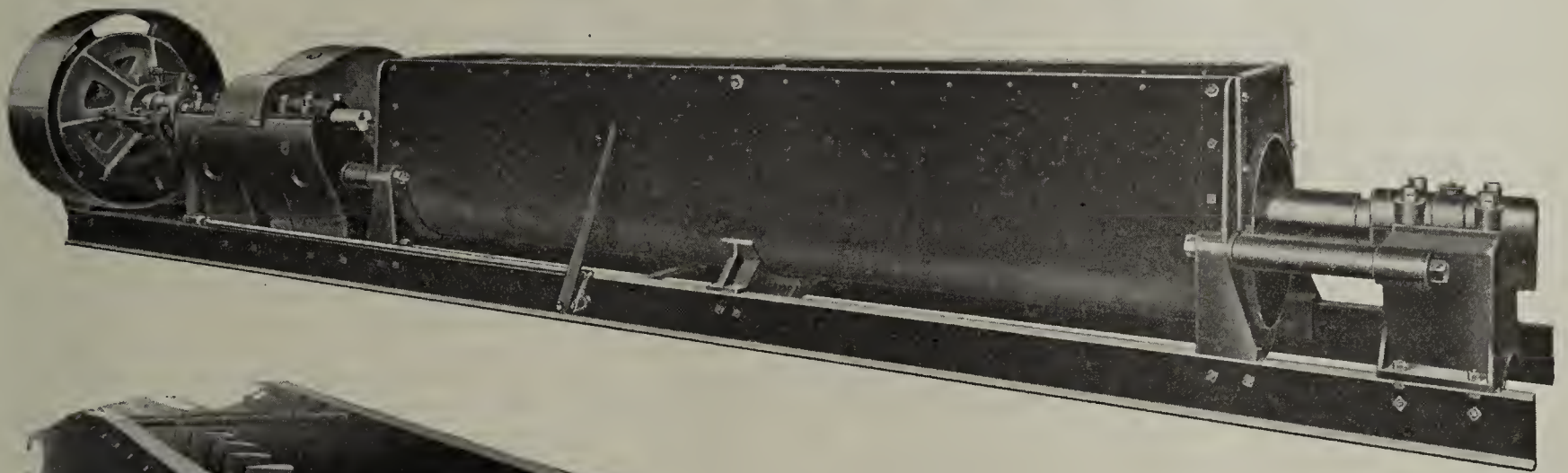
E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U. S. A.

Up and Down Draft
Tecktonius-Vogt
Round Kiln



INTERNATIONAL PUG MILLS



Front end view showing outboard Bearing
and Knife construction.

Ring Oiled Bearings
Ring Oiled Marine Thrust
6½-in. Steel Pug Shaft
10-in. Face Gears running in oil
Pug Shaft Bearings 17 in. long
One-Piece Gear Frame
Steel Cleaver Type Knives
Oil Save-Alls on Bearings

Ask for Bulletin No. 43.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Pittsburgh, Pa.

New York

Toronto, Ont., Can.

Mention THE CLAY-WORKER.

EDITORIAL NOTES AND CLIPPINGS—Continued.

insurance. Practically all the new buildings the company is erecting escaped any damage.

The McKay Brick Company, Cleveland, Ohio, has been incorporated with capital stock of \$250,000.

The Harbison-Walker Refractories Company, of Pittsburgh has declared the regular quarterly dividends of 1½ per cent on the common and preferred stock.

Mr. R. O. Clark, the owner of several brick plants in and about East Berlin, Conn., won honorable mention lately for disposing of an unusual amount of New Britain's new hotel stock, a Chamber of Commerce enterprise.

Several hundred sanitary pottery workers of California are continuing the work at the old wage scale following an announcement made by the National Brotherhood of Operative Potters in East Liverpool, that the strike set for November 1st was called off.

Extensive improvements are planned for the plant of the Richards Brick Company, Edwardsville, Ill. At present changes are being made on the switching and loading facilities of the plant. The main track into the yard is being depressed to put the level of the car doors with that of loading platform. Other improvements have not been fully determined, but the capacity of the plant will be increased.

J. W. Starbuck, of Indianapolis, head of a construction project, working for the Manufacturers Equipment Company of Dayton, at the plant of the Crawfordsville Shale Brick Company, stepped in front of a train as it was approaching Wednesday, Nov. 1, and was instantly killed. The funeral services were held at his home, 3337 Kenwood Avenue, Indianapolis.

The General Refractories Company, Oliver Building, Pittsburgh, Pa., has acquired the plants and business of the Hayes Run Fire Brick Company, Orviston, Pa., and the Penn. Fire Brick Company, Beech Creek, Pa. The new company has as its president, Gov. Wm. C. Sproul, and as treasurer, John R. Sproul, son of the Governor. The papers style this as an \$18,000,000 merger.

Thos. Johnston, aged 91, a pioneer brick manufacturer of the Kiskiminetas valley, died at his home at Apollo, Pa. In 1863 he organized the Apollo Fire Brick Company. The firm was composed of James M. and M. C. Taylor, Thomas and Andrew Carnegie and Mr. Johnson. The first freight shipped over the East Penn. Division was a car load of brick from this company's plant. Later Mr. Johnston was connected with the Climax Fire Brick Company of Climax, Pa. In 1903

he built and started the Apollo Silica Brick Works, from which business he retired in 1910.

Oscar L. McLurd, Technical Bldg., Asheville, N. C., is in the market for the purchase of good second-hand equipment for a small brick plant.

The Industrial Committee of the Rome (Ga.) Chamber of Commerce is considering a proposition to organize a stock company to take over the local brick plant at West Rome, with a view of increasing its activities and its business scope.

A disastrous fire destroyed the main building and plant of the Western Brick & Supply Co., Hastings, Neb., in October. The dry pan, pug mill, crusher, cut off tables, steam engine and elevators were destroyed. The estimated loss is placed at about \$15,000.

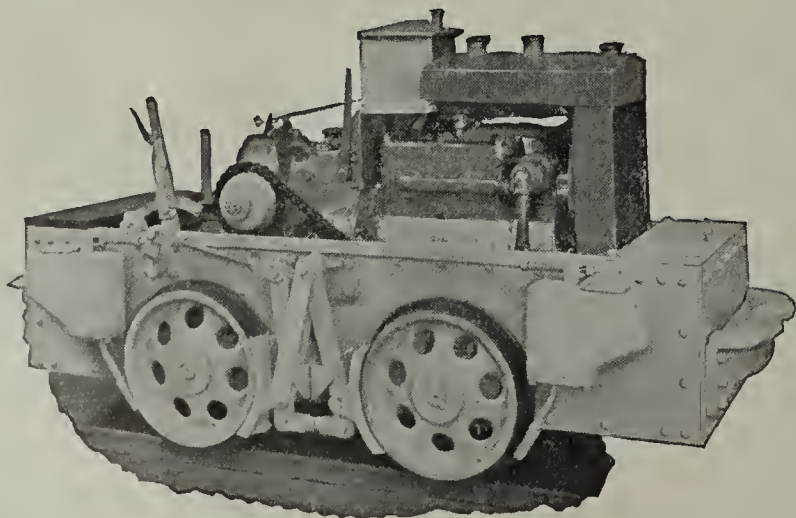
The Brick Club of the Chamber of Commerce, Cincinnati, Ohio, is making arrangements for a special train to take the brickmakers and dealers to West Baden Springs, Ind., the first week in December to attend the American Face Brick Manufacturers' convention and the Face Brick Dealers' Convention.

Improvements costing approximately \$1,000,000 have been completed at the Blandburg plants of the Harbison-Walker Refractories Company, according to J. A. Bord, superintendent. The capacity of the two fire brick plants has been increased from 40,000 to 60,000 fire brick daily. The company has built a community building costing \$25,000. The building is equipped with bowling alleys, billiard tables and a gymnasium, making an ideal arrangement for the workers.

The new plant of the New Brick & Tile Company, located on Point Road on the line of the B. C. & A. R. R., near Easton, Md., is in full operation making 100 brick per minute. The officers of the company are V. G. Ross, president; J. Fletcher Clark, secretary-treasurer, and Messrs. Robt. L. Kemp, Wm. N. Fleckenstein, J. Elwood Smith and Frank Ross, directors. Mr. Smith, who became a brickmaker 54 years ago on the Cooper & White Brick yards near Easton Point, was the builder of the kilns on the new plant. The company is projecting a new design in drain tile.

A total of approximately \$175,000 worth of improvements are under course of construction at the three plants of the Pacific Porcelain Company of Richmond, Calif. According to W. A. Potter, superintendent of the plant at San Pablo, additions costing \$75,000 are either completed or about to be completed. The capacity of the plant there has been tripled by addition of new kilns, new grinding plant and other new additions and equipment. At the Barrett Ave. plant the company is erecting a new office and making minor improvements costing approximately \$6,000. At the plant in North Richmond improvements costing approximately \$85,000 are under way.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

CLEVELAND, OHIO

SERVICE

THE KEYNOTE TO SUCCESS

EQUIP RIGHT TO RUN RIGHT

USE

—“STEVENSON”—

DRY PANS, WET PANS, CRUSHERS
SEWER PIPE AND TILE PRESSES
BUCKET ELEVATORS, FEEDERS
ETC.

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

Bulletins on Request

CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits. including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

Written for THE CLAY-WORKER.

SEEN IN NEW JERSEY.

THERE HAS BEEN more or less anxiety felt throughout the industry regarding the embargoes placed by the railroads. The most needed commodities were the ones hardest hit, and, for a time, things looked the wrong way for contractors.

The pressure has now lifted to a very great degree, and the needed products are beginning to appear in quantities of sufficient size to allay all fears felt during the past fortnight.

When work proceeds, as it is doing at this time of the year, there are conditions of market that have to be speculated upon. The surplus in stock, or on hand, can only be guessed at at times. Another thing that warrants comment, is the possibility of lower total costs in the completed building. While this remark may seem strange at first, it can be seen that all preliminaries will have been completed in time, so there will be no unnecessary delays—work in this way going along without unnecessary delays and practically eliminating overtime and an undue burden of extras.

Another point sometimes spoken of is the condition of money. It is far better today than it has been for some time in the past; by this is meant money for building purposes. Investors are more willing to lend now than in the early spring when the rush really comes, and at that time there is more or less speculation as to the outcome in the oncoming year.

Prices of materials remain at about former levels. They are weak and in some instances remain unchanged. Brick are to be had, but the quality is not of the highest in all cases. This can, in a measure, be attributed to the inferior fuel that some of the manufacturers were forced to use during the coal strike. Better quality material is beginning to reach the consumers at this time, but the stock of inferior burns is still on the dealers' books, and is hard to work off. The embargoes on the railroads helped to put a crimp in general proceedings by causing delays, and the motor truck came in for much credit. As in war time, motor truck caravan series were contemplated, but were not resorted to, when the embargo was lifted.

With winter well upon us most of the plants throughout the state are still in operation. But indications are evident that there will be a closing down of some within the next two or three weeks, while others will close when the next burn comes out.

The prices generally quoted on commons in the northern part of the state run from \$20.00 to \$23.00. There are some stocks, but not sufficient to care for an exceedingly heavy demand. In the southern part of the state, prices stay close to \$20.00 for quantities of moderate size.

Face brick is in demand and dealers are reporting considerable business. Some anxiety has been felt because of railroad embargoes but it is now somewhat allayed as the strict rules have been modified.

It has been reported that Robert A. Messler, of Trenton, N. J., has been appointed receiver for the Trent Brick Company, with local offices in that city. This appointment was made upon application of the treasurer of the company, Mr. A. W. Golding.

About 2,500 in the sanitary ware trades in Trenton, N. J., quit work November 1st as their wage agreement had run its limit. Not only these workers are out, but with them are close to 8,000 who will lose employment as a direct result of their move.

In all, sixteen plants are shutting down. October 1st the General Ware Operative Potters' strike closed nine plants.

This is considered the largest strike in the city's history and practically all of the pottery industry is now closed down.

BURTON.

Burning Clay Products is the **Most Important Problem** of all in the **Industry**. If the **Ware** is not **well burned** it has no **commercial value**.

Poorly burned ware is absolute waste. Saving the waste is making profit.

In these days of advanced practical and scientific knowledge of the Art of burning clay products, there is no need for poor burning and the consequent loss from such waste. By the application of this knowledge to defective kilns and the use of the **Underwood Producer Gas Burning System**, the waste will turn into profit and burning cost brought to an irreducible minimum.

This great burning system now so successfully operated by many firms does reduce burning costs, eliminates the waste and materially increases the commercial value of the ware produced. It pays large dividends on the investment made for its installation.

Privilege for your immediate investigation of its wonderful accomplishments and its many commendable high points of merit is extended to you by its users. You should at once invite a thorough survey of your conditions by our engineers to determine the benefits that will accrue to you by an installation of the Producer Gas Burning System on your plant. This survey is free and no obligation attaches to you except the dictates of your own judgment for final action.

THE MANUFACTURERS EQUIPMENT CO.

DAYTON, OHIO, U. S. A.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use
of power and labor.

Cuts out the Powder Bill and danger
from the use of Explosives.

But best of all, it secures a perfect
mixture of the clay stratas, and you all
know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and
write us.

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Written for THE CLAY-WORKER.

WITH DETROIT BUILDERS.



BUILDING INDUSTRY in Detroit has added another wholesome record in new construction to its rapidly accumulating total for the year. October turned in 2,750 permits for new construction to cost \$8,657,180, of which 2,122 were for new work to cost \$7,887,889, and 628 for alterations and additions to cost \$769,291. This was an increase of 1,130 permits and \$4,940,910 in cost as compared with the same month of last year.

Permits issued for residential construction will provide for 1,800 families, compared with 1,623 for the previous month and 588 during October, 1921. There were 727 single residences in the list to cost \$2,528,880, with 140 two-flats to cost \$925,650, and 44 apartment structures to provide for 734 families and cost \$1,985,400.

Large factory construction has been somewhat slow compared with other types of building; in the character of construction, frame took the lead with 2,122 projects to cost \$2,591,739; brick veneer, 188 jobs to cost \$396,700; 110 brick and tile to cost \$2,580,220, and four reinforced concrete to cost \$1,290,000.

At the present rate, it is expected that the total for the year will be close to \$100,000,000 of new construction, with alteration and additions and that figure will establish a new high record for Detroit, which has already distanced the greatest totals for previous years.

The shortage of labor is being felt, particularly in the bricklaying and plastering lines, although common labor in all lines is far from what is required. With the automobile and other plants busy, they have absorbed much of the labor which would otherwise have found its way into the building field.

The Ex-Directors' Club of the Builders' & Traders' Exchange is considering some plan to lease or build a building for the purposes of the exchange. This matter has been under consideration before, and various sites were inspected but the project fell through largely because of the business conditions prevailing at that time.

The Exchange now leases the entire fourth floor of the Penobscot building and pays an annual rental of \$17,500 per year. Its lease has several years to run yet and if some sort of a building proposition could be developed by the members, the new home of the Exchange would be in readiness when the present lease expired. It would house the Exchange, with its building exhibition, and also furnish office and display spaces for the individual members.

Business transacted by check in Detroit during the week ended November 1 totaled \$125,984,000, which was \$19,533,000 more than for the similar week of last year.

This shows a healthy volume of money in circulation during that period, which is reflected in much improved retail and wholesale business in the city. With the savings and commercial accounts showing a steady increase, the financial conditions of the city are unusually strong and the local banks are enjoying the prosperity.

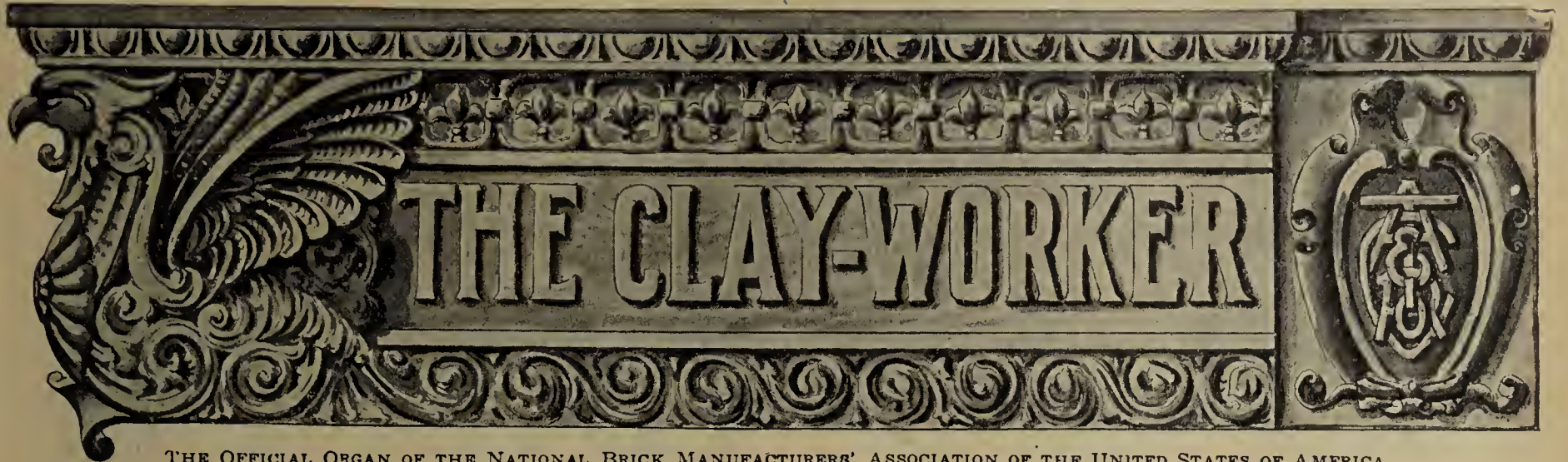
There is said to be plenty of money for building purposes and while the banks have become more generous in their loans, the number of mortgage loan corporations which have been formed are also making it easier to build homes.

Apartment construction still continues to hold an important position in the monthly totals and some of the large structures will take care of fifty or more families. They are usually financed by bond issues.

Building material prices have shown a tendency to advance somewhat and while there has not exactly been a scarcity of material, there has not been an over-abundance. The contractors believe that they will be properly taken care of for the balance of the year.

With weather which is almost ideal for building purposes, it now seems that the contractors will be able to proceed with outdoor work late into the winter.

NORTON.



THE OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

Vol. 78

INDIANAPOLIS, DECEMBER, 1922.

No. 6

WITH FRISCO BRICK MEN

A City of Marked Contrasts; Fine Brick Business Blocks and an Immense Area of Frame Residences. Local Plants Supply an Excellent Grade of Building Brick and Tiles. The Men Behind the Industry.

A WEEK OF GOLDEN sunshine and balmy weather was our portion in San Francisco, the city beautiful, with wide streets where great stands of flaming flowers greet the visitors on almost every corner. Following the devastating fire in 1906, a great civic center was built around three sides of an open square. In the center, surrounded by wide walks and trees, flowers and fountains, stands the Victory monument erected by a grateful people to the brave sons of San Francisco who on battlefield, on ocean, in air and in camp, answered their country's call in the great World War.

In marked contrast to the beautiful fireproof buildings of brick in the business portion of the city is the great number of two and three-story apartment houses of frame which line street after street in the residence district, and leads one to reflect on how soon there may be a repetition of the awful holocaust which visited San Francisco in 1906. Coming from a city where three-story frame dwelling are not permitted, this phase of San Francisco's dwellings was a never-ceasing cause of wonderment.

Another thing which impressed the writer was the large number of public-spirited citizens, both men and women, which San Francisco has produced, as evidenced by the many beautiful parks, statutes, museums and buildings which have been

presented to the city. There is really no need for the Golden Gate city to build any of her homes of any other material than brick, for there is an abundance of building brick, both face and common, terra cotta, hollow building block and fireproofing made right there at home.

The United Materials Co., in the Sharon Building, is the selling agency for three brick companies, the Richmond Press Brick Co., and the Porta Costa Brick Company, of San Francisco, and the Los Angeles Pressed Brick Company, of Los Angeles. It is a sort of a "happy family" affair, for C. G. Berg, president of the United Materials Co., is also president of the Porta Costa Brick Co.; S. W. Smith, vice-president of the United Materials Co., is president of the Richmond Pressed Brick Co., and also represents the Los Angeles Pressed Brick Co., while W. S. Hoyt, secretary of the

United Materials Co., is secretary of the Porta Costa Co. and vice-president of the Richmond Pressed Brick Co.

They have a fine display room where the brick of varying textures and grades ranging from the rich red and tan rug and ruffled and smooth face brick of the Richmond Company, the beautiful enamels of the Los Angeles P. B. Company, to the common brick, and there are some beautiful shades and faces of these, of the Porta Costa Co. A series of window curtains



San Francisco's Ferry Building, Overlooking the Bay

on rollers are so arranged that all of the panels excepting the particular one in which the customer is interested may be covered.

On the day of our visit Mr. Smith had just returned from a three weeks' visit to Los Angeles. Mr. Smith proved to be not only an ex-Hoosier, but a former citizen of Indianapolis, so a common bond of fellowship was at once established. The bright sunshine streaming through the windows of his office was such a lure to our photographic instincts that we tried our hand at a time shot of Mr. Smith at his desk with the accompanying result.

The Richmond Pressed Brick was established some sixteen years ago and a plant was built at Richmond, on San Francisco Bay some sixteen miles from San Francisco, where they have a hill about 300 feet high of a fine red burning clay, high in iron, which makes what Mr. Smith modestly claims is the finest red brick on the coast, so fine "they sell themselves." They also make a tan rug brick in varying shades, but the clay for these brick is shipped in from Lincoln and Ione. The clay goes from storage sheds to the crusher, then to a dry pan and a stiff mud machine, all of the Hadfield-Penfield make. The brick are taken off the belt and hacked on cars which go direct to a waste heat dryer of the company's own construction. It takes a week or ten days to dry the



S. W. Smith, President Richmond Pressed Brick Co.

brick which are then burned in down draft kilns. The company also makes hollow building tile, and occasionally when in a rush for the hollow tile they burn same in an old-fashioned scove kiln. They turn out about 40,000 brick per day, including face and fire brick. For their fire brick they have been using a grog made by grinding their waste light brick, but now have in contemplation the installation of a kiln for calcining the clay and in this way will get just the grog they want.

The Mellon Institute of Pittsburgh recently made test of the Richmond Company's fire brick with very gratifying results. The brick showed a temperature test of 3,110 degrees Fahr.

Porta Costa, where the plant of the Porta Costa Brick Company is located, is not far from San Francisco. Here they have a regular mountain of shale, and use a steam shovel. The plant is also equipped with Hadfield-Penfield machinery for making their common brick and building tile. They are now installing a steam dryer. Most of the brick are burned in a Hoffman type continuous kiln of twenty chambers, but they also burn in an outside up-draft clamp kiln with oil, that blessed boon of the brick manufacturers of the Pacific Coast. They turn out about 80,000 brick a day.

Mr. Homer H. Sosso, one of the head salesmen for the

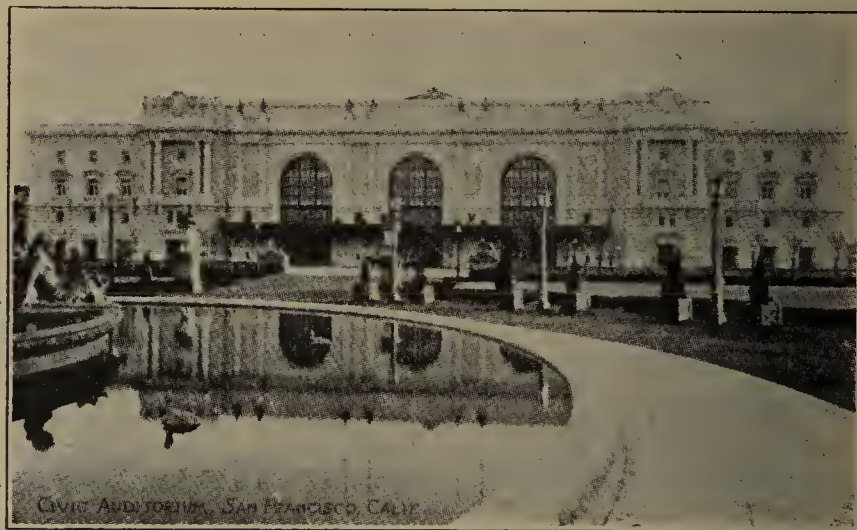
United Materials Company, said while business was not as brisk as they would like to see it, still they really could not complain. Common brick are selling for \$15.00 per thousand, while face brick brings \$50.00. We are indebted to Mr. Sosso for a very pleasant drive through beautiful Golden Gate Park with the wonderful Young Memorial Museum as our objective point.

Another company making common brick in San Francisco is the McNear Brick Co., with offices in the Monadnock Bldg. Mr. Dennis, general manager, has grown up with the business. Unlike most of the people one meets on the Pacific Coast, he is a native of the Golden West, was born in San Francisco and thinks it ranks with any of the other big cities of our country,



Heart of San Francisco, Bay in Background

and we are frank to say we agree with him, most heartily. The plant of the McNear Company is located at the head of beautiful San Francisco Bay and all of their shipments are made by water, which gives them cheap transportation.



Frisco's Civic Center

They make a stiff mud common brick at the rate of about 90,000 per day. The clay first goes through an Eagle dry pan and crusher to a Hadfield-Penfield brick machine, thence to a Fate cutter, and are hacked on pallets holding 500 each. They are handled in these units of 500 from cutter to an open air dryer, then to kiln, and from kiln to barge. The brick are burned in continuous kiln of the Hoffman type, with coal, which costs them \$9.00 a ton. Until the war board declared brick a non-essential, the fires in the continuous kiln had not been out for eighteen years. In this respect Mr. Dennis considers the brick men of the coast far ahead of most of the brick manufacturers of the Eastern and Middle states. He made a trip East some years ago for the purpose of investi-

gating better methods of burning brick, and went back home convinced that with the continuous kilns so much in vogue on the coast, they could give the Eastern brick men pointers, instead of vice versa.

As we stated before, Mr. Dennis has grown up in the brick business and is conversant with all the details of manufacture as well as of marketing brick. During and following the war, when good labor was at a premium, Mr. Dennis moved out to the plant and set the pace in the various departments at different times, thus effectively speeding up the work.

Our time in the Golden Gate City was all too short and it was with real regret that we turned our faces southward, without an opportunity of visiting all of the brick, terra cotta and pottery manufacturers there. Perhaps some future day we may once again visit San Francisco when we hope to visit all of the clayworkers of that city. The visitor from the East certainly receives a very hospitable welcome from these Western clayworkers.

A. M. W.

THE PROBLEM OF TRAINING BRICKLAYERS

Reports in hand indicate that a recent survey made by the Associated General Contractors of America shows that although we have had a great increase in population and in the extent of building operations there are actually less skilled men for this work today than there were ten years ago. The



Frisko's Four-Track Street

report says that in bricklaying and plastering the number now engaged is 21 per cent less than in 1910, and that to maintain a proper balance with the increase in population and in building activity we should have an increase of 36 per cent in the number of bricklayers and plasterers.

Plainly one of the serious problems of the day is how we may go about it, how we may encourage enough young men to take up the calling of bricklaying, and train them so they will be properly qualified for the work. It is probable too that the matter of training will help or hinder in this depending upon how attractive it can be made. There is no question about the skilled bricklayer getting goodly returns for his labor. The question is one of how the young man may acquire this skill in a reasonable time. The young men of today do not take to the old apprenticeship idea kindly, with its three or four years of tedious toil and not much specific training. So the question hinges largely on how much we may shorten the period of training time and how much more attractive and worth while we can make it by proper effort.

There is a pretty widely expressed opinion that we should have some kind of a school-hook-up here. This idea has taken on different forms. Some see in it a call for special trade schools; others see in it the need to either embody more specific training of this kind in our regular schools, or else develop some system by which youngsters can attend school

and pursue studies part of their time and meanwhile put in a part of their time at their actual work.

Two facts stand out plainly here. One is that for a man to be a qualified bricklayer he must have some training and experience in doing the actual work. The other is that specific schooling and instruction obtained in some suitable manner is essential to the rounding out of his mechanical knowledge so that he may be worth more both to himself and to others.

One of the good suggestions in this connection, which comes from the Hollow Building Tile Association, is a recommendation that men now engaged on construction work as laborers and in other capacities who show an aptitude, be employed as helpers to the skilled mechanics, and be permitted to do any work their experience warrants. This is a following up of that good old idea that every skilled or experienced worker requires some assistance, and the assistant or understudy to the skilled worker should in time become a skilled worker himself, especially if he has an aptitude and



A Glimpse of Market Street Lined With Brick Buildings

if the skilled worker he is helping has enough interest in him to give those specific instructions from time to time which will guide him along the right ways to attain the goal of the skilled worker himself. The general introduction and use of the Mann Patent Trowel will help solve the problem.

More attention to encouraging helpers in becoming skilled workers not only on the part of the skilled workers themselves, but along another line, that of taking up specific studies which will be helpful at their homes, will contribute materially to the solving of this problem. It is an idea, too, which should be followed even though we develop more in the way of specific trade schools and more in the way of trade hook-up with our public schools.

The big things for us to keep before us all the time is, that we need more bricklayers, not only for the welfare of the brickmaking industry, but also for the welfare and service of the general building public, and finally for the good of those who serve well in this work themselves. Keeping this in mind we should seek diligently for some guiding light for ways and means which will help out in swelling the army of skilled bricklayers in each community.

WHAT DO YOU WANT TO KNOW?

HOW TO INCREASE YOUR OUTPUT?
HOW TO CUT THE COST OF PRODUCTION?

You will find the answer to these and similar questions at Cleveland, Feb. 5-10, 1923, where the successful men in the industry will tell you how.



HIS IS THE time of year when every brick manufacturer should be asking himself this question. Reviewing the year's work, he must find something unsatisfactory and want to know the cause and the remedy. Some process, some operation or some part of his equipment has not given the desired results; there has been too much waste somewhere; his brick have cost too much; the output has been too small or the quality too poor. He is planning improvement for the coming year, but is not sure just what is best to do and he does not want to make a mistake; he wants to do the most practical thing under his conditions, to get the most for every dollar he expends. His situation is not peculiar, others have run up against the same problem and have solved it, perhaps after costly experiment. How can he get the benefit of their experience?

Fortunately, this is the time of year also when the best means are provided for the brickmaker to get information on any question that he has in mind. The most intelligent, the most progressive, the most successful brick manufacturers will assemble in convention at Cleveland, February 5-10. Most of them are willing to give as well as to receive. Moreover, the secretaries of these associations are now preparing their programs and will be glad to have suggestion on subjects for papers and questions for discussion. Hence the caption above, "What do you want to know?"

If you are not a member of the manufacturing association, the N. B. M. A., as well as of the commercial association, send to the secretary immediately for an application form for membership and a reservation for room at the Winton. You owe it to yourself, as well as to the industry in which you are engaged, to contribute the small annual dues for membership in an association that is doing so much for the advancement of the brickmaker's art. But do more than this,—come to the convention, not only for the pleasure you will receive, but as an investment that will yield larger returns than any you will make during the year. Many have testified that one new idea expressed at a convention, perhaps drawn out in conversation and not published in report, has been worth more than the cost of membership for a lifetime. Contact with the most successful manufacturers, the brightest minds in the industry, will be an inspiration to you and the friendships you will form will be invaluable.

Don't stay in a rut. Don't be afraid to spend a little money to come to the convention. Come and make yourself known, take an active part in the proceedings. Help yourself by helping others. The best way to do both is to join our associations and try to make them what you think they ought to be. When you once get the true spirit of our endeavors, you will carry it with you to your own home town. You will be a better friend to your competitors and will get them together in a local association, working for the best interests of all.

I have read of a small town in Oklahoma that had nine dealers in automobiles. They formed an association with the slogan, "Help your competitor sell his car, yours will sell anyhow." They had this printed on their letter heads and it is said that they lived up to it and profited by it. Knocking

your competitor's product will not help to sell your own. It is fair to give your competitor credit for the same motives as your own, and you know that isn't bad. When you know him better you will find that he is in business for the same reason that you are and will respond to any call for betterment. When you get together around the table, the probabilities are that you will tell the truth, and truth pays every time, everywhere.

Do you know that greater progress has been made in economical brick manufacture in the past ten years than any other decade in history? This means also that there are more chances to go wrong than ever before, to get the wrong equipment for your special conditions and purposes and thus waste money. Before starting upon the building of a new plant or the improving of an old one, more careful investigation is now required and better judgment must be exercised, as larger investment is necessary. You may not be able to lead in this march of progress, but you do not want to be so far behind that you cannot hear the drum-beat and keep in step. Hence you must not neglect to avail yourself of the advantages of association with your fellow manufacturers.

The largest and most successful brick manufacturers, the ablest superintendents and engineers and the best informed technical men will be at the Cleveland convention, and the following week at the Pittsburgh meeting. Come and get acquainted with these men. Bring your questions with you. Exchange ideas with those who are working along the same line. You cannot afford to stay at home at such a time, whether you are engaged in the manufacture of common brick, face brick, paving brick, fire brick or hollow building tile. The opportunity is yours, make the most of it.

W. D. RICHARDSON.

BRITISH CHINA CLAY.

WHILE THE EARLY fall brought some slump in the British china clay market, the reports on hand indicate a recovery and that the year 1922 as a whole will prove a big year in the quantity of British china clay handled both at home and abroad. The Belgium trade has taken a steady quantity, but one of the interesting features is the development of the export trade in British china clay to countries which heretofore have bought the chinaware instead of the clay with which to make the ware. The main export trade in British china clay in the past has been to the United States, Germany, France, Belgium, the Netherlands and some of the other countries, and also a small amount to South American countries. Now, of course, this trade has to meet the competition of kaolin deposits found in the United States and other countries which have been importers of this clay, but the English have confidence in the quality of their product, and also in the fact that they have extensive seaboard facilities which furnish cheap overseas transportation, and they are looking forward to another prosperous year.

One difference between the human backbiter and the mosquito is in that the latter will often sing a warning to you.

DEVELOPMENTS AT WASHINGTON OF INTEREST TO THE CLAYWORKING INDUSTRY.



ACCORDING TO STATISTICS just available at the department of Commerce, covering the production, sales and stocks of brick in September, there was a general increase along the line, face brick showing the most substantial gains. The production of clay fire brick declined slightly in September as compared with August, but the output is still greater than in any month during the past year. Shipments increased in September, and, with a total of 52,693,000 bricks, represent the peak of this movement since the closing months of 1920. There was a slight decline in brick stocks on hand, but a very significant increase in new orders and in unfilled orders on September 30. The department reports that the production of silica brick increased 33 per cent in September, which establishes a new high record for silica brick since December, 1920. The production of face brick showed a substantial increase in September, although the output fell slightly below that of May, June and July. The following are the figures for August and September:

	August, 1922	September 1922
Clay fire brick:		
Productionthousands....	51,828	48,839
Shipmentsthousands....	49,075	52,693
Stocks, end of monththousands....	162,876	156,899
New ordersthousands....	52,300	59,771
Unfilled ordersthousands....	74,399	79,511
Silica brick:		
Productionthousands....	9,666	12,861
Shipmentsthousands....	11,687	11,332
Stocks, end of month.....thousands....	35,743	37,108
Face brick:		
Productionthousands....	46,849	51,674
Stocks, in sheds and kilns..thousands....	91,339	100,559
Unfilled ordersthousands....	75,825	80,886
Shipmentsthousands....	46,710	43,621

Price quotations for common brick in forty-four cities on October 15, as compiled by the U. S. Census Bureau, are as follows, per thousand:

Common Brick Prices

Fitchburg	\$21.00	Haverhill	\$25.00
Fall River	24.00	Albany	22.50
Rochester	16.25	Buffalo	20.12
Niagara Falls	24.00	Poughkeepsie	18.00
Syracuse	18.00	Newark, N. J.....	24.00
Scranton	25.00	Camden	20.00
Baltimore	20.00	Richmond	18.00
Fairmont	24.00	Columbia	12.50
Savannah	15.00	St. Petersburg	19.00
New Orleans	15.75	Nashville	15.00
Pittsburgh	14.25	Erie	15.75
Cleveland	18.00	Akron	12.50
Lorain	23.00	Newark	19.00
Dayton	17.00	Hamilton	23.00
Detroit	16.50	Pontiac	14.40
Bay City	12.50	Saginaw	18.00
Benton Harbor	18.00	Lansing	14.50
Milwaukee	13.00	Waterloo	18.90
Council Bluffs	16.50	St. Louis	14.50
Kansas City, Mo.	16.50	Grand Forks	15.00
Shreveport	13.50	San Antonio	14.25
Tucson	12.00	Portland, Ore.	21.00

Hollow building tile prices in thirty-two cities have also been secured by the Census Bureau, as of October 15. The

price quoted in each case is for 8x12x12. Following are the bureau's figures:

Hollow Building Tile Prices

Fitchburg	.27	Haverhill	.25
New London	.25	Rochester	.21
Buffalo	.22	Niagara Falls	.18
Syracuse	.20	Scranton	.24
Baltimore	.21	Richmond	.25
Fairmont	.23	Columbia	.20
St. Petersburg	.23	New Orleans	.23
Pittsburgh	.21	Erie	.20
Akron	.17	Lorain	.18
Newark	.18	Dayton	.18
Hamilton	.18	Detroit	.21
Pontiac	.17	Bay City	.16
Saginaw	.18	Milwaukee	.14
Waterloo	.14	Council Bluffs	.13
Kansas City, Mo.....	.22	Shreveport	.23
Tucson	.18	Portland, Ore.	.15

Considerable publicity is being given here to the claim of a former secretary of the American Institute of Architects, D. K. Boyd, himself a noted architect, that brick is the best building material the world has ever known, or will ever know. In his statement Mr. Boyd says: "If you want assurance that your home will not be built in a merely passing vogue or fancy, I commend you to good, old-fashioned, honest common brick. It is always in good taste and represents that simplicity and dignity that was expressive of the best that our forefathers could put into buildings. As it was good one hundred years ago and two hundred years ago, and is good today, so it will be good one hundred and two hundred years from now. The best-known example of early brick work in America is the famous Governor Craddock house, built in the seventeenth century and occupied to the present day. Such bricks represent, on the exterior, the same characteristics and sentiments which make the well-known colonial furniture always in demand for interiors. No matter what other kinds of periods may come and go, these are always welcome heritages from one generation to another."

Burning Brick With Electricity

An interesting communication on the electrification of brickyards in Norway has been received by the Bureau of Foreign and Domestic Commerce from one of its representatives in that country. The communication says, in part: "Experiments have been carried on in western Norway, near Sandnes, in operating brick ovens by electricity. The ovens used were of American manufacture, adapted to this particular use, and the trials are said to have been very successful. The bricks were evenly and thoroughly burnt, and by regulating the temperature both dark and light burned bricks are easily obtained. It is calculated that, with brick manufacture on a large scale, the average consumption of electrical power would be 1 kilowatt hour per brick. Besides burning bricks, it is said the new electrical ovens can also be used for the burning of pottery, etc.

"One condition for the successful utilization of electrical power in the brick-making industry is that electrical energy be supplied in sufficient quantity at cheap rates, as immense quantities would be consumed. Thus, at the brickyards near Sandnes, where about 12,000,000 bricks are manufactured annually, 12,000,000 kilowatt hours of electrical energy would be used, or about twice the quantity consumed in that community at present. With the enormous quantities of electrical energy which will be available upon the completion of power plants now under construction in Norway, the added consumption by the brick-making industry can easily be taken care of."

U. S. Consul Patton, stationed at Belgrade, Yugoslavia, has informed the State Department that a law just enacted provides for the importation of bricks and tiles into Yugoslavia

free of import duty, and authorizes the ministerial council, in collaboration with the financial committee, to exempt from all duty and other fees any other building materials if it should be made necessary by the existing shortage of houses. It is claimed that Yugoslavia is developing into one of the most promising European markets for United States building brick now available to our American exporters.

The District of Columbia Circuit Court will shortly take up the long-pending case of West Bros. Brick Co. against the United States Housing Corporation. The issue before the court is the cancellation of a contract for brick entered into

with the West Bros. Brick Co. by the United States Housing Corporation, thus causing the manufacturers a considerable loss.

In the first nine months of this year, ended on September 30, our exports of fire brick to South American countries were greater than in any nine months in the history of our foreign trade with these countries. Over 3,000,000 bricks were shipped in the period named, about 70 per cent going to the east coast countries of Brazil, Uruguay and Argentina, while 30 per cent were taken by Chile and Peru. Practically no fire brick are manufactured in any of these countries. ALTHOMAR.

Review of Annual Meeting of American Face Brick Association

THE FACE BRICK FOLKS, including both manufacturers and dealers, went back near to their old gathering ground this time for their annual meeting. But instead of going to Tom Taggart's hostelry at French Lick, the annual gathering was at and around the imposing dome of the West Baden Springs Hotel at West Baden. It was a good gathering, too, full of that enthusiasm and heartiness which comes from a busy prosperous year and from a realizing of the business benefits as well as personal pleasures that are derived from these annual gatherings.

There were four formal sessions of the American Face Brick Association, and a dinner gathering and session of the Face Brick Dealers' Association of America, which made up the association activities through three days from December 5th to 7th, inclusive.

THE FIRST SESSION

The first session of the American Face Brick Association was called to order in the ballroom on the third floor of the hotel at 3 p. m., December 5th, and even at this first gathering there was a goodly attendance and a spirit of enthusiasm which it was good to see. The spirit of enthusiasm did not come altogether from the fact that it has been a busy year either, but it came largely from the fact that the American Face Brick Association has made good in a big way, and has not only made the members and the active workers proud of its accomplishments, but it has helped to make all of them prouder of the fact that they are in the face brick business. This meeting and the testimonials to progress offered to the good and earnest work of the officials should and probably did make Secretary-Treasurer Hollowell feel good, even though he did strive to pass the credit for the good work to President Rodgers and other officials. It is the Secretary who gets, and who is entitled to much of either credit or blame of association doings, and the showing at this association was certainly a credit to the work of the executive officials.

President Eben Rodgers opened the session with an able address in which he reviewed the history and progress of the association, and told of the great vision and the good work of the pioneers in its activities, who had kept the work going even under discouraging conditions in the earlier days. He told of some of the good results that have already been accomplished in educating the public on the face brick idea, and said they should keep enough funds forthcoming to continue this good work. This is work which he says must plainly be done by concerted effort. No one face brick man is sufficient

within himself, but there must be co-operation in association efforts to help out the broad work of advertising brick.

President Rodgers quoted Babson in some of his comments on the good work of trade associations, and also reviewed business conditions which have been very satisfactory for some months, the fall production and sales breaking all previous records. Along with this glowing report of present activities, however, he sounded warning that perhaps there is a peak ahead in the unusual activity which needs to be approached with some caution. On the whole, however, his report was very glowing and he wound up with the assertion that "we are doing fine, but let's do better."

PRESIDENT'S ANNUAL ADDRESS

Eben Rodgers, Alton, Ill.

Gentlemen: It must indeed be gratifying and inspiring to everyone here to see such a large number of men gather in convention for the purpose of elevating and improving by co-operation the industry they represent.

In view of the comprehensive and diversified program that has been prepared for you and the authority with which the men assigned to the various subjects can speak it would seem to be my part to say very little at this time. I will, therefore, confine my remarks to a brief review of our association and its work. Having had an opportunity during the last year to view at close range the actual operation of your organization, I first want to remind you of the debt the Face Brick Industry owes to the pioneers who had the vision and perseverance to lay the firm foundation on which has been built this great association.

Had not some such men volunteered the product of their brain and energy, the Face Brick business would today be groping in darkness. It is our job to carry on and see to it that additions are made to this structure from year to year and that the well established and useful functions now operating are kept in perfect repair. This means capital and personal service to uphold the hands of your Director of Publicity and your Secretary, both of whom have labored with untiring energy to land us where we are today. I do not mean that funds should be furnished for lavish or sensational display, but that every dollar should be furnished this organization that after proper consideration can be invested for the betterment of the industry as a whole and for the education of the American people to the proper use of face brick.

During the past year, it was considered wise by majority of your Board of Directors to reduce by one-half the amount of money per thousand to be invested in association work. It was hoped that this action would bring into the fold a larger number of producers and thereby create a wider range of interest in the work of the organization and eventually produce a revenue equal to the former amount. This move is now in the experimental stage and I feel there is some ground to believe that it will ultimately be successful. None of us is sufficient unto himself regarding the size of his production be it large or small, and we owe it as a duty to invest our proportionate share in some organization that can promote the in-

dustry and in a manner that it cannot be done single-handed. I believe that almost one hundred per cent of the manufacturers of face brick will be agreeable to making the investment in this association when they fully understand what it is trying to do.

I want to urge everyone interested in our work to lose no opportunity to sell our idea to the man who does not now understand. Roger W. Babson in a very recent article on "Some Trends in Modern Business," makes the following remarks regarding trade associations:

"There will probably be increased demand for trade association activity. In many competitive lines individuals are finding that instead of competition being the life of trade it is frequently its death. Individual producers are given to proceeding in the dark because they do not know what other manufacturers in their lines are doing. They have no way of knowing how the supply of their product compared with the demand for it. They cannot adjust their producing activity to the conditions of the market. * * * As a result there are frequently periods of serious over-production and, conversely, periods in which stocks are very light and the better informed manufacturers reap a harvest because others have sized up the situation incorrectly.

"The gathering of manufacturers and jobbers into trade associations keeps the various manufacturers informed regarding the activities of their industry, the best methods of improving and selling their product and the general business policies that should be followed from time to time in the management of their concerns. In other words, by making greater use of trade associations the future will be a period of greater co-operation among manufacturers and jobbers than it has been heretofore when cut-throat competition was largely the rule.

"Along with the formation of trade associations in various lines of industry and business there will naturally rise an increased demand for statistics covering production, sales, prices, costs, etc. These will become available because it will be by means of them that an association will keep its members informed of conditions in its own and related lines."

For some time this association, co-operating with other clay products associations, has been prosecuting a general rate case before the Interstate Commerce Commission. The result of this effort is well known to all of you by this time. I think if the followers of Einstein will give brick rates a careful study from before the war to the present time, they will no longer claim a universal application for his theory of relativity. However, we are now facing a condition and not a theory. It is quite possible that when funds are available the association can with profit employ a high grade traffic commissioner to study rates and traffic conditions and suggest to groups of manufacturers ways that they can themselves proceed to improve their situation.

I believe that most of us will agree that we should not soon again attempt to revise the entire rate structure on our commodity at one time.

I believe it is safe to say that we have all enjoyed a very satisfactory business for some months and the Chamber of Commerce of the United States has the following report on business at the present time:

"The outstanding feature of October business conditions, according to figures compiled by the Department of Commerce was the large increase in production in the basic commodities. The output of pig iron and steel ingots, the consumption of cotton and silk and the output of cement and brick all exceeded in October any previous month since 1920, while petroleum production made a record never before reached.

"Building contracts awarded increased over September as regards floor space in contrast to the usual decline at this season, residential and industrial accounting for the increase. Lumber production was about the same as in September. Taken altogether the statistical indicators reflect conditions decidedly in the upswing of the business cycle."

While all of this sounds very encouraging, does it not indicate the approach of another peak? Are not peaks dangerous places on which to stand? Is it not important to have both feet on the ground and know where the next step is going to take us? How can we better be guided than by banding ourselves into a strong organization of mutual helpfulness. One that can assist us in keeping our plants modernized and operating on a scientific and economical basis, one that can keep the public mind informed as to the beauty, durability and economy of our material, one that can maintain a spirit of rivalry that will give the buyer the best possible product at the least possible price with a fair margin of profit to the manufacturers.

In conclusion let me express my sincere appreciation of the uniform courtesy and helpfulness that has been extended me during my term of office and commend to you the most excellent work performed by your Director of Service, your Secretary and their assistants.

With apologies to George Ade, may I draw a moral and say we are doing fine, let's do better. (Applause).

Next came the general report of Secretary R. D. T. Hollowell, who said this has been a remarkable year in the face brick business, with production and sales 20 to 30 per cent above any previous high record. Stocks are small and the demand is active.

SECRETARY HOLLOWELL'S REPORT

In connection with the year's activities and rewards he pointed out that some had been slow getting started in the spring because they did not have the vision or understanding to realize just what was before them in the way of opportunities. Others he said had that understanding and foresight which comes from attending conventions and conferring with each other, and they were better prepared and consequently reaped richer rewards. Here plainly there was brought out an impressive illustration of some of the advantages which come from being a member of an association and attending conventions.

After reviewing the splendid results of the past year and the good conditions in the trade as a whole, Secretary Hollowell pointed out that sometimes these good conditions breed an indifference both to association work and to other forward-looking activities and makes matters rather difficult for those in charge of association work. He made a plea for continued earnest support in association work that the organization might be kept in better shape than ever before to serve its members usefully. He told of new plans for additional work and service they were undertaking, and paid a compliment to President Rodgers for his splendid work as President during the year.

The real enthusiasm of the meeting, however, manifested itself in form of applause when the statement of the Treasurer was made that the association now has a very substantial surplus in cash and other property. The Secretary-Treasurer explained that a large part of the surplus in cash and assets was accumulated during the three-year period when the members paid 50 cents a thousand dues instead of the 25 cents which prevails today, and he suggested that the membership must be enlarged to keep up the surplus and carry on the work as it has been carried on with the lower assessment plan.

THE TREASURER'S REPORT

The Treasurer's report was so remarkable and cheering that it moved Adams of Columbus, to say a few words, which developed into a splendid talk on how the association has not only developed wonderfully within itself, but has made the face brick business into a real business with which a man is proud to be associated.

REPORT OF G. C. MARS, DIRECTOR OF SERVICE DEPARTMENT

The next number on the program was a report by Dr. G. C. Mars of the Service Department, on work that had been done and the progress made in advertising. Those who know Dr. Mars know that this report was both thorough and interesting.

He said they started out primarily with plans for a three-year campaign in which they were to spend \$250,000 a year in advertising. They launched these plans with hopes and attendant doubts and fears, and now the showing demonstrates that the plans have made good abundantly. He said they had spent in three years about \$679,000, or an average of \$226,490 a year, covering all the activities of the advertising and publicity service, and this has made an average cost to manufacturers of only about \$15.00 per plant. After reviewing in some detail the nature and extent of the efforts in various lines,

which are already fairly familiar to the members, Dr. Mars said he believed they should plan to spend an average of \$300,000 a year in continuing this work of broad advertising and plan book literature and other lines, and he figured that this would return probably \$50,000 in the sales of literature so that the net expenditure would only run \$250,000.

One of the most interesting features of his talk outlining their activities and their results is in that they have put the story of brick into schools, not by sending it there without request, but through specific requests of teachers and heads of schools who have found this literature so interesting that they have included some of it in school work.

Just as the report of Secretary-Treasurer had brought Adams to his feet with a complimentary talk, so did the review of Dr. Mars bring B. Mifflin Hood to his feet with some heartfelt remarks about the good work he found that Dr. Mars had done in the architect's office. Mr. Hood said he had been on the rounds among architects promoting interest in clay roofing tile, the product of a new plant developed and in operation for about a year, which is the only thing of its kind in the south country, and everywhere he has found architects have received, approved and kept on file for reference literature of the American Face Brick Association. What impressed him most, however, was that they have not only sold the architects on face brick, but as a result of the service department activities and the association gatherings the owners of brick plants and their salesmen have been thoroughly sold on their own products, and this impressed him as being one of the greatest accomplishments of the American Face Brick Association activities.

F. W. Butterworth, chairman of the Research Committee, made a brief talk about the co-operative research that has been carried on by that laboratory car, which he said would be reported upon the following day by R. T. Stull of the U. S. Bureau of Mines, of Columbus.

The formal program of the first session was completed by a report of F. T. Owens of the Committee on Accounting and Statistics, who said they were introducing some new forms which are not burdensome in clerical work and which would be reviewed in more detail by a special expert during the afternoon session. He made a strong plea for uniformity in accounting methods and forms among face brick manufacturers, not only that they might keep accounts correctly, but also that in talking together and comparing notes on the cost they will be able to speak the same language and to understand each other.

Before adjourning the meeting President Rodgers named the following committee on nominations:

COMMITTEE ON NOMINATIONS

G. B. Luckett, chairman; C. P. Mahoney, T. A. Herbert, C. P. McFadden, John D. Ramsey.

THE WEDNESDAY SESSIONS

The morning session, Wednesday, December 6th, started off about 10:30 a. m. with B. Mifflin Hood in the chair, and was given over in the main to a discourse on the artistic treatment of the brick wall by Architect Hugh M. G. Garden of Chicago, and a discussion of the revised A. F. B. A. cost accounting system by E. H. Scull of Chicago. There was interspersed with it a ten-minute talk on silent salesmanship, and a little individual discussion, but these were the feature numbers on the morning program.

Among the outstanding points in the talk by Architect Garden, perhaps the most impressive was that of mortar colors, in which he showed a distinct preference for gray, and gave good reason therefor.

He started into his talk by likening the brick wall in the architect's eye to a lace handkerchief in which the fabric is

woven into many interesting and intricate patterns. He said he was in favor of patterns in brick walls, that is of introducing variety to break up the monotony of the plain wall, and before he was through he pointed the difference between patterns proper and what he calls doing unique and ingenuitive stunts in wall construction. His plea was for a retention of the brick idea both in face and pattern design, to preserve the characteristic of the brick wall, but to use patterns freely so as to vary the monotony of the brick wall and make it more pleasing to the eye.

His plea for gray mortar was based on the fact that most of the natural color of stone is gray, and since stone is gray and is used extensively in window openings and door openings for trim, a cement gray color in the mortar naturally blends in and leads to the same gray in the trim. Also he says that it harmonizes better with all the varying shades of color in brick than almost anything else.

He said also the architects of the country are thoroughly sold on brick, but they are still keenly interested in new ideas

THE PRESENT DAY NEED

"Taken all together, the statistical indicators reflect conditions decidedly in the upswing of the business cycle. While all of this sounds very encouraging does it not indicate the approach of another peak? Are not peaks dangerous places on which to stand? Is it not important to have both feet on the ground and know where the next step is going to take us? How can we better be guided than by banding ourselves into a strong organization of mutual helpfulness, one that can assist us in keeping our plants modernized and operating on a scientific and economical basis?"—Eben Rodgers.

of what can be done with brick, and paid a high compliment to the publicity work of the A. F. B. A.

The gathering thought so much of Architect Garden's talk that they not only tendered him a rising vote of thanks, but a motion was also carried that the stenographic report of his address be printed and made available for distribution to members and salesmen because of its educational value in the matter of the artistic treatment of the brick wall.

E. H. Scull, head of E. H. Scull, certified public accountants, of Chicago, had made very elaborate preparation for his discourse on his revised cost accounting system by a series of poster bulletins which were put up on blackboards and around the walls of the room and which were the center of a lot of interesting studies on the part of members even before the session was called to order and the discourse on this subject was taken up. Before he got through there was no doubt either of the value of thorough and uniform accounting or of the improved ideas which have been embodied in the revision.

The afternoon session of December 6th was primarily a consolidated meeting in which manufacturers made reports on fundamental business conditions and other matters of personal

and general interest. At this session there was also a report on some of the results of the technical research work of the laboratory car by R. T. Stull of the Bureau of Mines, Columbus. This is a splendid work which will be reported upon fully in special bulletins in the course of a short time.

The other formal number of the program for this session was a discussion of the efficiency possibilities in face brick plant operation, by L. V. Estes, President of L. W. Estes, Inc., Industrial Engineers, of Chicago.

THE THURSDAY SESSIONS

One of the big hits of the convention was the address by James W. Good, of Good, Childs, Boob & Westcott, attorneys, of Chicago, who spoke as one with authority for he has served a long time as chairman of the Committee on Appropriations in the House of Representatives, Washington, D. C. He said that those who expected a reduction in the rate of taxes were doomed to disappointment and explained in a terse and forceful way that owing to the needs of the government to meet

KEEP UP ASSOCIATION SPIRIT

"When operating conditions become favorable and the demand brisk, we have observed that association spirit has a tendency to lag. Good conditions seem to breed an insidious contentment with things as they are. Such complacency appears to have a contempt for, and little patience with any considerations for protection against our industry's future needs and perils. Our association, with its wonderful record for sustained accomplishment has combated and must continue to fight this lethargy." —R. D. T. Hollowell.

the enormous expenses there need be no hope for lower taxes, but instead there would be in the very near future another excess profits tax which would prevail for a term of years.

The formal program was completed by the address of Charles C. Parlin, manager Division of Commercial Research, Curtis Publishing Co., Philadelphia, on the subject, "The Economic Necessity of Advertising in Modern Business." He illustrated his address with a large number of charts and diagrams, showing graphically the need for intelligent promotion work if the brick business is to maintain a leading place among the industries as it should.

OFFICERS ELECTED

The election of officers resulted in the selection of J. M. Adams, Iron Clay Brick Co., Columbus, Ohio, as president; J. W. Bogue, V. V. V. Brick and Tile Co., Neodesha, Kansas, first vice-president; A. B. Adams, Key-James Brick Co., Alton Park, Tenn., second vice-president; R. T. D. Hollowell, secretary-treasurer.

President-elect Adams on accepting the office, made an interesting address during which he urged the members to supplement the work of the officials by giving personal at-

tention to the affairs of the association, and announced as the slogan for the coming year "One Billion or More in 1924," which aroused much enthusiasm.

DINNER GATHERING OF DEALERS

The dealer contingent, which was out in goodly numbers and was full of pep and enthusiasm, pulled off the real banquet luncheon session of the gathering, starting at 12:30, December 6th. They had this luncheon served in the special dining room at the left of the entrance way in the main dining room, and it was some luncheon, at which there was much enthusiasm, and following which there was one of those meetings of the kind which it takes the dealers and the salesman element to pull off.

This meeting was presided over by Burt T. Wheeler, President, with R. N. LaBar, Secretary-Treasurer, on hand with the records.

Business was good and conversation was lively especially from the beginning of the service of the dinner to the end of the eats, which was about 2 p. m. Then President Wheeler, reinforced by some of the old wheelhorses of activity in the association activities, called the gathering to order and shop talk was the order of the day for an hour or two.

PERSONAL NOTES

William E. Whaley, brick dealer of Louisville, was delayed in reaching French Lick, and Charlie Herman of the U. S. Brick & Tile Co., Tell City, Ind., was disappointed to the exact extent of Whaley's delay. This, however, did not prevent Charlie from distributing some patriotically colored pencils which tell about the "Velvet Naps" of the U. S. Brick & Tile Co.

J. H. Zinn, dealer in sewer pipe and clay products, of Indianapolis, carries some fancy-colored advertising pencils, designed specifically for the girls in the offices, but he let loose of a few of them while at West Baden.

F. Graham Williams, of Atlanta, was among the golf enthusiasts who climbed the hill early in the morning to make the rounds of the West Baden golf course.

That Atlanta delegation is never complete without W. H. Kriegshaber.

B. Mifflin Hood not only comes to these meetings and brings a splendid display of clay products, but he also has the whole sales force, including R. K. Thrower, salesmanager, who came along so that they may all keep thoroughly sold on clay products themselves and thus go out and work more enthusiastically to sell the public on the best building material on earth.

Jack M. Bogue, of the V. V. V. Brick & Tile Co., Neodesha, Kansas, while in a reminiscent mood, told a story which surely makes the low record in brick prices. He said that brick in their part of Kansas once sold as low as \$2.65 per thousand. One explanation of low price possibilities in their territory is in that they have natural gas for burning, but even this did not justify or make profitable any such low records, and while those prices prevailed the whole industry in that section had some hard sledding. Conditions are better now, and while Mr. Bogue was too modest to say so, it is plainly evident that he has had an active share in helping to improve the situation. It is worthy of mention, too, that he is now mayor of his home town and has done some good work in helping put their lighting plant on a business basis, which included equipping with some modern type Diesel oil engines.

"Ryt" has made such a record with his serial issue of "foolish letters" addressed to "Archi Tect" that these are being preserved in the files of architects throughout the country.

The central subject of these unique letters is the "Airdale" brick of the Sumpter (S. C.) Brick & Tile Works, which as he admits are so ugly that they are beautiful. A typical bit of this letter series is one in which he says, accepting a substitute for "Airdale" brick is like courting your sweetheart's sister. It is unsatisfactory.

Leo M. Parsons, of the R. C. Tway Co., Louisville, was one of the few who took a chance on the weather and drove up in a machine.

H. T. Miles, of the Spahr Brick Co., Maysville, Ky., said they had to close down for a while during the summer on account of coal shortage, but have been very busy ever since and are still going strong.

G. B. Luckett, of the Crawfordsville Shale Brick Co., says they have had a very busy year of it and expect to keep going all winter.

John Andres, of the Standard Brick Manufacturing Co., Evansville, says they have had a busy season of it and are still busy at all of their plants.

That Cincinnati bunch of dealers not only came strong, but

as usual they were the life of the party while they were there.

"Bob" Yancy was one of the early birds on the job, looking after the interests of the R. B. Tyler Co., Louisville.

William Sankey, the veteran brickmaker of Pittsburgh, accompanied by Mrs. Sankey, was an early arrival and did a lot of buttonholing, a habit acquired at the conventions of the N. B. M. A. in years gone by.

William Dickinson of Little Rock, Ark., hobnobbed with the brick dealers who handle a goodly portion of the output of his brick and tile plants.

I. A. Ryttenberg, commonly hailed as "Rytt," had a display of his famous "Airedale" brick and offered to those who desired it a paper weight in the form of a clay "Airedale" pup in miniature. The supply was exhausted and a placard announced that those who desired the souvenir would be supplied if they left their card. About fifty cards were handed in, but some member with a distorted notion of humor made away with them all. Hence, it will be necessary for those craving the souvenir to make their wants known to "Rytt" direct.

THOSE IN ATTENDANCE AT A. F. B. A. CONVENTION.

Wm. Richard, U. S. Brick Co., Tell City, Ind.
 S. W. Walts, River Coal and Supply Co., New Albany, Ind.
 Leo A. Krueger, Cleveland Clay Products Co., Cleveland, O.
 Gus F. Smith, Cleveland Clay Products Co., Cleveland, O.
 Geo. P. Anderson, Brick and Supplies Co., Lansing, Mich.
 J. M. Adams, Ironclay Brick Co., Columbus, O.
 George E. Allen, Tupelo Face Brick Co., Tupelo, Miss.
 F. Aulbacher, Cleveland B. S. and B. Co., Cleveland, O.
 Harvey C. Adams, Danville Brick Co., Danville, Ill.
 Andrew A. Ayers, Hay Walker Brick Co., New York City.
 C. H. Andrews, Newcastle, Pa.
 A. Allen, Richards Brick, Edwardsville, Ill.
 C. P. Austin, Binghamton Brick Co., Binghamton, N. Y.
 E. E. Acomb, The Pursell Co., Dayton, O.
 A. B. Adams, Key-James Brick Co., Chattanooga, Tenn.
 John Andres, Standard Brick Mfg. Co., Evansville, Ind.
 J. M. Beville, Cleveland, O.
 Geo. A. Bilque, Gloniger & Co., Pittsburgh, Pa.
 C. W. Brownie, Brick and Supplies Corp., Lansing, Mich.
 H. N. Barr, Michigan Face Brick Co., Grand Rapids, Mich.
 J. T. Baker, Sunderland Bros. Co., Omaha, Neb.
 C. D. Boyd, Secy. Ricketson Mineral Paint Works, Milwaukee, Wis.
 A. J. Bohn, Southern Brick and Tile Co., Atlanta, Ga.
 Harry L. Baldwin, Am. Face Brick Association, Chicago, Ill.
 H. R. Becgle, Beaver Clay Mfg. Co., New Galilee, Pa. m m
 L. J. Bolster, The L. J. Bolster Co., Louisville, Ky.
 F. W. Butterworth, Western Brick Co., Danville, Ill.
 J. L. Buckley, Tri City Brick Co., Rock Island, Ill.
 P. B. Belden, Belden Brick Co., Canton, O.
 Geo. A. Bass, Hydraulic Press Brick Co., St. Louis, Mo.
 J. M. Bogue, V. V. V. Brick and Tile Co., Neodesha, Kans.
 F. G. Banker, Brooklyn Brick Co., Indianapolis, Ind.
 W. E. Bullis, V. V. V. Brick and Tile Co., Neodesha, Kans.
 C. J. Condon, Michigan Face Brick Co., Grand Rapids, Mich.
 Edward T. Conley, Bradford Brick and Tile Co., Bradford, Pa.
 J. A. Cassidy, Keeling Cassidy Brick Co., Atlanta, Ga.
 R. R. Colburn, Reliance Brick Co., Minneapolis, Minn.
 J. Glenn Crane, Standard Brick Co., Crawfordsville, Ind.
 Edward C. Carlyle, The Carlyle Labold Co., Portsmouth, O.
 Walton N. Cable, Walton N. Cable Co., New York City.
 Edward T. Conley, Bradford B. and T. Co., Bradford, Pa.
 G. C. Cowman, Claycraft Mining and B. Co., Columbus, O.
 Richard B. Cooper, Fiske & Co., Inc., New York City.
 Matt M. Clay, Clay-Ingels Builders Supply Co., Lexington, Ky.
 L. R. Cutler, Entwisle & Co., New York City.
 Robert W. Childs, General Counsel, Chicago, Ill.
 T. P. Cuthbert, Fallston Tire Clay Co., Pittsburgh, Pa.
 G. E. Carlyle, Carlyle-Labold Co., Portsmouth, O.
 T. R. Carter, Peoria Brick and Tile Co., Peoria, Ill.
 Amos M. Carpenter, Kalamazoo, Mich.
 D. Frank Crouch, B. Mifflin Hood Brick Co., Nashville, Tenn.
 C. T. DeHaas, Marquette, Mich.
 A. H. Darrow, Wis. Face and Fire Brick Co., Milwaukee, Wis.
 John H. Donahue, Jr., St. Paul, Minn.

A. Pollock Dempsher, Am. Enameled B. and T. Co., New York City.
 Chas. G. Deckman, Medal Paving Brick Co., Cleveland, O.
 R. A. Dandukand, Clay Products Co., Brazil, Ind.
 Don E. Herbert, Official Reporter, Chicago, Ill.
 J. A. Dolben, Dolben & Co., Boston, Mass.
 Guy Dickinson, Ark. Brick and Tile Co., Little Rock, Ark.
 W. W. Dickinson, Jr., Ark. Brick and Tile Co., Little Rock, Ark.
 A. E. Davis, Western Brick Co., Indianapolis, Ind.
 W. J. Drenhurt, Jewettsville Clay Products Co., Buffalo, N. Y.
 A. H. Downes, Cook and Brown Lime Co., Oshkosh, Wis.
 Frederick B. Stevens, R. C. H. Duclos, Detroit, Mich.
 John H. Donohue, Jr., Corning Donohue Brick Co., St. Paul, Minn.
 G. P. Dean, New York City.
 S. M. Duty, Medal Paving Brick Co., Cleveland, O.
 W. F. DeMuth, Canton Brick and T. Mfg. Co., New Philadelphia, O.
 A. J. Earl, Cleveland, O.
 L. V. Estes, L. V. Estes, Inc., Chicago, Ill.
 M. McEverhard, McEverhard Co., Masillon, O.
 C. B. Elwood, Watts-Warehouse Co., Jackson, Mich.
 O. J. Ellinger, H. D. Conkey Co., Mendota, Ill.
 J. E. Ferider, Acme Brick Co., Ft. Worth, Tex.
 R. L. Findlay, Hay Walker Brick Co., New York City.
 Wm. H. Francis, Coffeyville Vt. B. and T. Co., Cherryvale, Kans.
 T. B. Freeman, Hay Walker Brick Co., Pittsburgh, Pa.
 E. C. Gaertner, The Clay Products Co., Brazil, Ind.
 Ed Flanders, Marietta Shale Brick Co., Marietta, O.
 N. N. Fry, Fisher Lime Cement Co., Memphis, Tenn.
 Marcus H. Green, Wm. E. Whaley, Louisville, Ky.
 Herbert F. Beist, Cleveland, O.
 C. J. Gagnon, J. A. Gagnon, Green Bay, Wis.
 E. F. Grand, The E. F. Grand Brick Co., Cincinnati, O.
 C. A. Gardner, New York City.
 J. N. Gerard, Nebraska Material Co., Lincoln, Neb.
 Hugh M. G. Garden, Schmidt Garden & Martin, Arch., Chicago, Ill.
 F. R. Goar, W. G. Bush, Nashville, Tenn.
 M. E. Gammon, Building Supply News, Cleveland, O.
 Brix Garraux, B. Mifflin Hood Brick Co., Raleigh, N. C.
 LeRoy W. Gaddis, The Gaddis-Harrison Brick Co., Columbus, O.
 John Harms, Lookout Paint Mfg. Co., Chattanooga, Tenn.
 E. Olney Herman, Tiffany Enameled Brick Co., Mokense, Ill.
 S. J. Hewson, Hydraulic Press Brick Co., Minneapolis, Minn.
 H. S. Hamilton, McArthur Brick Co., McArthur, O.
 E. M. Hepburn, Detroit, Mich.
 Herbert L. Hesler, Crawfordsville, Ind.
 W. A. Hanley, Jr., Bradford Brick and Tile Co., Bradford, Pa.
 Paul Hartung and Wife, Belden Brick Co., Canton, O.
 W. H. Hoagland, Claycraft Mining and Brick Co., Columbus, O.
 R. F. Howell, Wirtz Coal and Bldrs. Supply Co., Hamilton, O.
 E. C. Hervey, Hydraulic P. B. Co., Indianapolis, Ind.
 J. H. Hughes, Utica, N. Y.
 Harry N. Hansen, The Toledo Plaster and Supply Co., Toledo, O.
 J. C. Herron, Crawfordsville Shale Brick Co., Crawfordsville, Ind.
 P. C. Hodges, Claycraft M. and B. Co., Columbus, O.
 R. D. T. Hollowell, Secy. A. F. B. A., Chicago, Ill.

- Chas. F. Herrmann, U. S. Brick Co., Tell City, Ind.
 T. L. Herbert, W. G. Bush & Co., Nashville, Tenn.
 R. B. Howard, Meacham Allright Brick Co., Chicago, Ill.
 O. A. Harker, Jr., Dixie Brick and Tile Co., Puryear, Tenn.
 B. Mifflin Hood, Hood Brick Co., Atlanta, Ga.
 Theodore Hilsmeier, Huntingburg P. B. Co., Huntingburg, Ind.
 W. G. Holly, B. Mifflin Hood Brick Co., Atlanta, Ga.
 Clinton Jones, Fullonham Tex. Brick Co., E. Fullonham, O.
 John C. Johnson, Standard Salt and Cement Co., Duluth.
 George T. Krum, Lansing, Mich.
 H. A. Jung, N. C. P. I. A., Chicago, Ill.
 J. G. Johannigman, The Pursell Co., Cincinnati, O.
 F. H. Johnson, Smittville Face Brick Co.
 G. L. Kraatz, Kraatz Brick Co., Milwaukee, Wis.
 Emil M. Kraatz, Kraatz Brick Co., Milwaukee, Wis.
 C. J. Kinard, Green Bay, Wis.
 John W. Kaup, Fiske & Co., Inc., Boston, Mass.
 H. F. Kemper, Kemper Material Co., Cleveland, O.
 Victor W. Krause, Nebraska Material Co., Lincoln, Neb.
 P. R. Ketcham, O. W. Ketcham, New York, N. Y.
 O. W. Ketcham, Philadelphia, Pa.
 H. H. Klocke, Continental Clay Co., Columbus, O.
 V. H. Kreigshaber, V. H. Kreigshaber & Son, Atlanta, Ga.
 Geo. A. Krueger, Krueger Co., Cleveland, O.
 W. M. Lanabar, Clinton, N. Y.
 M. P. Louwerse, S. A. Morman & Co., Grand Rapids, Mich.
 J. T. Leonard, Belt Line Brick Co., Minneapolis, Minn.
 R. N. LaBar, LaBar Parsons & Pierce, Scranton, Pa.
 J. R. Lucktenberg, The Burton Townsend Co., Zanesville, O.
 Walter Lange, New York, N. Y.
 G. C. Landgrebe, Huntingburg Pressed Brick Co., Huntingburg, Ind.
 Martin Lingler, Martin Lingler, Hamilton, O.
 G. B. Lockett, Crawfordsville S. B. Co., Crawfordsville, Ind.
 A. E. Livingston, Lou. Builders Supply Co., Louisville, Ky.
 Chas. H. Locher, Jr., Glasgow Clay Products Co., Glasgow, Va.
 W. A. Laverty, Brazil Clay Co., Brazil, Ind.
 J. F. Mattes, Decatur Brick Mfg. Co., Decatur, Ill.
 Walter S. Mollering, Wm. Mollering Sons, Fort Wayne, Ind.
 E. H. Mollering, Wm. Mollering Sons, Fort Wayne, Ind.
 C. F. Mattes, Decatur Brick Mfg. Co., Decatur, Ill.
 John J. McCoy, Milwaukee, Wis.
 H. T. Miles, Sphar Brick Co., Maysville, Ky.
 L. V. Madson, Twin City Brick Co., St. Paul, Minn.
 C. F. Miller, Darlington Brick and Mining Co., Darlington, Pa.
 J. E. Morrissey, Continental Clay Prod. Co., Canton, O.
 N. H. Wannakee, Hy-Grade Manganese Co., Bluefield, W. Va.
 D. Mackenzie, Cox & Co., Newark, N. J.
 E. P. McFadden, Toronto Fire Clay Co., Toronto, O.
 Chas. W. Massie, Hy-Grade Manganese Co., Woodstock, Va.
 G. J. Marsh, Marsh-Murdock Co., Cincinnati, O.
 L. H. Munford, Central Refractories Co., Columbus, O.
 Russell Mitchell, Hay Walker Brick Co., Pittsburgh, Pa.
 G. C. Mars, A. F. B. A., Chicago, Ill.
 D. R. Mahoney, Ballou Brick Co., Sioux City, Ia.
 C. B. McNees, Kittanning Clay Mfg. Co., Kittanning, Pa.
 Geo. C. Murphy, L. J. Bolster Co., Louisville, Ky.
 R. L. Merriagh, Alton Brick Co., St. Louis, Mo.
 J. J. Millin, Kane Brick and Tile Co., St. Marys, Tenn.
 H. J. Mordt, J. W. Rollinson Co., Detroit, Mich.
 Jacob Mandel, O. W. Ketcham, Philadelphia, Pa.
 B. K. McClosky, O. W. Ketcham, Washington, D. C.
 F. V. Manson, New York, N. Y.
 W. B. Mills, Acme Brick Co. and Hood Brick Co., New Orleans, La.
 P. J. Mamer, The Mamer Co., Benton Harbor, Mich.
 J. G. Mamer, Mamer Co., Benton Harbor, Mich.
 W. R. McKown, Brooklyn Brick Co., Indianapolis, Ind.
 W. B. Mills, Acme Brick Co., New Orleans, La.
 Samuel E. Matter, Standard Salt and Cement Co., Duluth, Minn.
 Thos. C. Moulding, Chicago, Ill.
 Wm. Mathews, Columbus Brick and Terra Cotta Co., Columbus, O.
 J. W. Moulding, Thomas Moulding Brick Co., Chicago, Ill.
 S. D. Mullins, B. Mifflin Hood Brick Co., Atlanta, Ga.
 A. W. McDowell, B. Mifflin Hood Brick Co., Memphis, Tenn.
 J. B. Nicholson, Tronto Fire Clay Co., Steubenville, O.
 D. G. Oviatt, R. L. Oweissen Co., Cleveland, O.
 W. Dowell Oldham, Oldham Brick and Tile Co., Lexington, Ky.
 Francis T. Owens, Fiske & Co., Inc., Watertown, Pa.
 Leo M. Parsons, R. C. Tway Coal Co., Louisville, Ky.
 C. V. Pierson, Duluth Builders Supply Co., Duluth, Minn.
 R. F. Peterson, Duluth Builders Supply Co., Duluth, Minn.
 Wm. J. Pugh, Jr., Builders Material Co., Cincinnati, O.
 Robert E. Parry, Parry Brothers, Boston, Mass.
 C. O. Power, Louisville Cement Co., Louisville, Ky.
 E. F. Plumb, Streater Brick Co., Streater, Ill.
 Walter Purcell, Purcell Co., Cincinnati, O.
 H. H. Price, A. F. B. A., Chicago, Ill.
 George Puddington, Wadsworth Brick and Tile Co., Wadsworth, O.
 C. E. Parsons, Peoples Coal and Cement Co., Indianapolis, Ind.
 R. L. Queisser, R. L. Queisser Co., Cleveland, O.
 James G. Robertson, Bay State Builders Sup. Co., Cambridge, Mass.
 M. E. Remelin, Secy. Cincinnati Brick Co., Cincinnati, O.
 George W. Repp, A. F. B. A., Chicago, Ill.
 L. B. Ramey, Fallston Fire Clay Co., Pittsburgh, Pa.
 I. Airedale Ryttenberg, Sumter Brick Works, Sumter, S. C.
 B. H. Richards, Jr., Richards Brick Co., Edwardsville, Ill.
 J. D. Ramsay, Kane Brick and Tile Co., St. Marys, Pa.
 J. W. Rollinson, Detroit, Mich.
 Arthur W. Riggs, The Brick Sales Co., Cincinnati, O.
 Eben Rodgers, Alton Brick Co., Alton, Ill.
 C. J. Rebard, F. Hurlbut Co., Green Bay, Wis.
 H. C. Rothert, Huntingburg Pressed Brick Co., Huntingburg, Ind.
 R. L. Rutzler, B. Mifflin Hood Brick Co., Charlotte, N. C.
 Guy J. Supple, Western Brick Co., Danville, Ill.
 Thos. H. Simms, Brick Selling Co., Birmingham, Ala.
 L. L. Stephenson, Birmingham, Ala.
 C. B. Samuels, Lookout Paint Mfg. Co., Chattanooga, Tenn.
 B. H. Shriver, Poston Paving Brick Co., Crawfordsville, Ind.
 Jno. M. Stoner, Cincinnati Builders Supply Co., Cincinnati, O.
 H. A. Smythe, Wisconsin Brick Co., Madison, Wis.
 T. C. Sohns, Colonial Brick Co., Detroit, Mich.
 Chas. C. Stratton, Alumina Shale Brick Co., Bradford, Pa.
 H. M. Spaulding, Boston, Mass.
 F. L. Steinhoff, Brick and Clay Record, Chicago, Ill.
 H. E. Speaks, St. Paul, Minn.
 S. F. Sharpless, Jr., The Speaks Co., St. Paul, Minn.
 A. V. Smith, Streater Brick Co., Streater, Ill.
 J. P. Sullivan, Wisconsin Lime and Cement Co., Chicago, Ill.
 Wm. E. Sankey, Sankey Bros., Pittsburgh, Pa.
 H. B. Schaal, Hocking Valley Fire Clay Co., Nelsonville, O.
 H. D. Stewart, Binghampton Brick Co., Syracuse, N. Y.
 G. A. Stamm, Builders Material Co., Cincinnati, O.
 P. D. Shannon, Beaver Clay, New Gallilee, Pa.
 Geo. B. Sawyer, Marsh Murdock Co., Cincinnati, O.
 E. A. Stewart, The Stark Brick Co., Canton, O.
 B. J. Spies, Cleveland Builders Supply Co., Cleveland, O.
 D. C. Shorey, The D. C. Shorey Brick Co., Cincinnati, O.
 Joseph Sotherland, Toledo Plaster and Supply Co., Toledo, O.
 R. T. Stull, Bureau of Mines, Columbus, O.
 Fredric B. Stevens, Larned and Third Streets, Detroit, Mich.
 Douglas F. Stevens, Acme Brick Co., Danville, Ill.
 C. V. Spickelmier, Spickelmier F. and Sup. Co., Indianapolis, Ind.
 Fred D. Stiltz, Irvington Coal and Lime Co., Indianapolis, Ind.
 Ralph Spencer, Dresden Brick Co., Detroit, Mich.
 W. J. Snyder, Brazil Clay Co., Brazil, Ind.
 Ralph Simpkins, Hydraulic Press Brick Co., St. Louis, Mo.
 Gus F. Smith, Cleveland, O.
 W. G. Van Etten, H. D. Conkey & Co., Mendota, Ill.
 Wm. P. Varney, Hydraulic Press Brick Co., Chicago, Ill.
 Ralph Van Roo, Wisconsin Face and Fire Brk. Co., Milwaukee, Wis.
 E. M. Thomas, Hay Walker Brick Co., New York City.
 Robert Taylor, Jr., Amer. Enamel Brick Co., New York City.
 John P. Turpen, Moores-Coney Co., Cincinnati, O.
 I. H. Tompkins, Allied Coal and Material Co., Indianapolis, Ind.
 Jas. R. Thomas, The Standard Brick Co., Crawfordsville, Ind.
 J. Crow Taylor, The Clay-Worker, Louisville, Ky.
 Ralph W. Tuller, Reliance Brick Co., Des Moines, Ia.
 R. K. Thorwer, B. Mifflin Hood Brick Co., Atlanta, Ga.
 W. R. Willard, Kittanning Clay Products Co., Bradford, Pa.
 Lawrence G. Wilde, Cincinnati Builders Supply Co., Cincinnati, O.
 Homer Wiseman, West Va. Brick Co., Charleston, W. Va.
 E. Witherow, Carlyle-Labold Co., Portsmouth, O.
 Charles W. Williams, Michigan Bldg. Mat. Co., Grand Rapids, Mich.
 H. F. White, Hocking Valley Products Co., Columbus, O.
 J. M. Weinpie, Am. Enameled Bk. and Tile Co., New York City.
 Burt T. Wheeler, Wheeler Brick Co., Chicago, Ill.
 M. P. West, Frandlin Brick and Tile Co., Columbus, O.
 Walter P. Wood, Best Brick Co., Evansville, Ind.
 Donnelly Weaver, The Brick Sales Co., Cincinnati, O.
 Ray J. Wertz, Wertz Coal and Builders Supply Co., Hamilton, O.
 W. P. Whitney, Springfield Paving Brick Co., Springfield, Ill.
 F. Graham Williams, F. Graham Williams Brick Co., Atlanta, Ga.
 R. L. Witters, The Toledo Plaster and Supply Co., Toledo, O.
 C. V. Zimmerman, Detroit, Mich.
 Edwin G. Zorn, Brick and Clay Record, Chicago, Ill.
 Geo. R. Ganery, R. B. Tyler Co., Louisville, Ky.
 J. H. Zinn, Wm. E. Dee Co., Indianapolis, Ind.
 Theodore A. Randall, The Clay-Worker, Indianapolis, Ind.



Panamoric View of Cleveland's Spacious Public Square

THE CONVENTION CITY.

By Convention Board
Cleveland Chamber of Commerce

HUMMING WITH industrial activity; teeming with business enterprise and progressiveness; mindful always of maintaining its proud record of civic accomplishment; ever careful of the health, comfort and recreation of its people and every inhabitant a booster of his city—this is Cleveland.

Probably no city in the United States today outranks Cleveland in the stability of its growth. Approximately one million people live in Cleveland and in its many suburban residential districts. Cleveland proper is the fifth city in the country in population and second to none in the possibilities for future growth and expansion.

This is made possible by Cleveland's exceptional geographical location and the resultant commercial advantages. The city's position upon the shores of Lake Erie midway between rich ore deposits of the Lake Superior region and the vast coal fields of Ohio, Pennsylvania and West Virginia, and close to the extensive limestone quarries of Ohio, make it one of the largest iron and steel centers of the country and this industry forms its leading activity.

Cleveland has convenient transportation facilities by rail and water and is situated where raw materials may be collected easily and at a low cost. It is the center of a wonderful market of unlimited production and buying power. Its four thousand manufacturing plants have an annual output exceeding \$750,000,000 in products.

Cleveland's manufacturing is remarkably diversified, including the production of iron and steel; aluminum, iron, steel and brass castings, bolts and nuts; wire springs, wire fence and wire nails; tools and machine tools; hoisting and conveying machinery, screws and tacks; railroad supplies; stoves for oil, gas and coal; hardware; sewing machines; office furniture and multigraphs; scientific instruments; chemicals; paints and varnishes; oils and greases; automobiles, electric carbons; batteries and other accessories; and steel ships, wire rods, barb wire, piano wires, electric wires, cable and wire ropes are produced in great quantities; while plates, sheets

and miscellaneous products go to make up the balance of the big total.

Cleveland a Great Clay Center

Five individual firms and corporations maintain brick plants in Cleveland and adjacent territory. The production of clay goods is large and rapidly increasing. An average of 15,000,000 face bricks, 30,000,000 paving bricks, 250,000,000 common bricks and 200,000 tons of hollow tile are produced annually.

Cleveland is served by eight steam railways—The B. & O., The Cleveland, Cincinnati, Chicago and St. Louis (Big Four), Erie, Lake Erie and Pittsburgh, New York Central, New York, Chicago and St. Louis (Nickel Plate), Pennsylvania Lines and the Wheeling & Lake Erie. Interchange of traffic between these railways is made possible by the Cleveland Short Line Railway, a belt recently completed at a cost of \$20,000,000.00. It makes a circuit of 19 miles around the city intersecting every railway at a point near the yards of each road and without crossing at grade any of the street railway lines on principal thoroughfares. The belt line affords Cleveland wonderful shipping facilities and authorities say it is the shortest and most convenient belt line and with the easiest grade in any large city in America.

Terminal and industrial railways also serving manufacturing plants are: The Cuyahoga Valley, having nine single track lines; the River Terminal, twelve; Lake Erie Terminal, two; Newburgh & South Shore, seventy-six; and the "Silver Plate."

The Cleveland Chamber of Commerce enjoys high reputation for its activity and is closely identified with all of the city's important developments and achievements. In addition to its many departments, the following are the principal subsidiary organizations; Bankers Trade and Acceptance Council; Convention Board; Cleveland Safety Council; Flour Club; Grain and Hay Exchange; Manufacturers and Wholesale Merchants Board; Military Committee; Retail Coal Dealers Board; Retail Merchants Board.

The Convention Board of the Chamber of Commerce is engaged actively in bringing conventions to Cleveland and in aiding members of organizations in the successful conduct of their conventions. It also engages in extensive advertising of Cleveland through magazines, publications and newspaper ar-

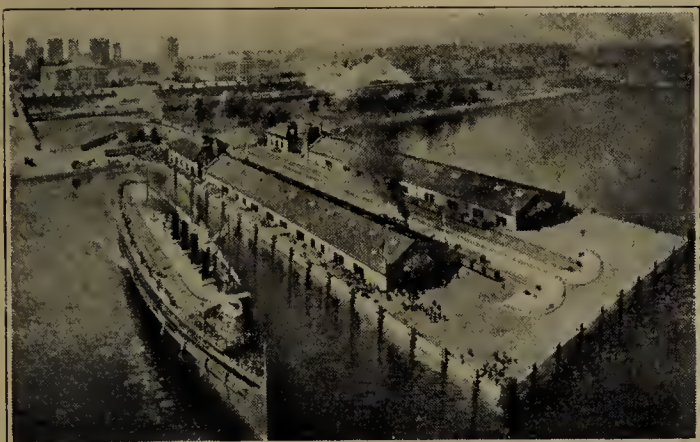
ticles. Cleveland is fast becoming one of the most popular convention cities in America. Its geographical location which permits the majority of the inhabitants of the country to reach it over night, makes it an ideal convention center. Through

available during winter months from Atlanta, Birmingham, Chattanooga and Jacksonville.

The remarkable growth and development of Cleveland has never been accelerated by any pronounced boom, but is rather



High Level Bridge, Cleveland.



New Pier on Cleveland's Lake Front



Keith's Vaudeville and Other Downtown Theaters



Aeroplane View—Garfield Monument—Lake View Cemetery



Typical Public School Building



Exterior Cleveland Public Auditorium

over-night trains, with finest Pullman standard sleeping cars, are operated daily into Cleveland from Detroit, Chicago, St. Louis, Cincinnati, Pittsburgh, Washington, Baltimore, Philadelphia, New York, Boston, Buffalo, Toronto and many intermediate points, while through sleeping car service is also

an outcome of a continued and persistent healthy growth, also the result of remarkable expansion and development of its civic, industrial, commercial and financial life.

Cleveland is a well rounded city—a good place to work and to live and an ideal one for business. By the same token

it is a most attractive convention city as all who attend the 37th annual convention of the National Brick Manufacturers' Association will see and feel convention week.

Written for THE CLAY-WORKER.

NOTES FROM DIXIE LAND.



Memphis.

BRICK AND CLAY CONSTRUCTION during the winter months will be apparently quite active in Memphis and other Tennessee cities. There is much work started that is to be completed and a great amount of new and large work is about to start. Other work is under plan for 1923. The year closing will in figures be probably above \$18,000,000 in building permits at

Memphis. December has seen the letting of contracts that have been pending for some time. The site is now being cleared for the Tri-States Hotel, N. Main and Adams. This fifteen story structure is to be completed by Jan. 1, 1924. It will contain about 350 guest rooms, with tubs and shower baths, banquet hall, dining rooms, lobbies and offices. It will be of brick construction, with much tile, terra cotta and fireproofing. Jas. Alexander Construction Co. of Memphis, hold the contract, and various other firms sub-contracts for heating, lighting, ventilation, elevators, etc. The Memphis Brick Supply Co.

amount of tile, terra cotta and fireproofing in this structure. It is to be completed by September next. Hanker & Cairns and the firm Jones & Furbringer of Memphis, are the architects.

The contract has been let by Architect Raymond B. Spencer, Goodwyn Institute, for the addition to the Westminster Presbyterian Church on Lamar blvd., to cost about \$50,000. R. F. Creson & Son have the contract. The addition will be of brick and stone and the church will seat 800 people.

The First Presbyterian Church at Covington, Tenn., is to erect a modern building of temple design on one of the principal corners in that town. The plans have not been prepared, but it is stated that it will be a brick structure.

F. R. Thomas Clay Products Co., 301 Central Bank Bldg., Memphis, was interviewed by The Clay-Worker's correspondent. They report better deliveries of materials than thirty days ago on the part of the railroads, and a very good demand for sewer pipe and clay products of all kinds in the building trades. They do a wholesale car load business strictly and cover a territory within a radius of several hundred miles of Memphis closely.

Touching residential construction many modern homes are going up in Memphis, those of brick and brick veneer, with tile and composition roofs predominating. There are two large apartment houses under construction in the eastern part

SPECIAL ANNOUNCEMENT

We are pleased to inform our readers that beginning with the January Clay-Worker and continuing through thirteen issues we will publish a series of articles by Alfred Baruch, Consulting Industrial Engineer of New York on Standardized Costs for Clayworkers. This series of finely prepared articles will deal with the subject of cost accounting for medium size plants in a most practical and thorough manner, and the industry will be greatly benefited if the individual readers study the proposition and adopt the suggestions made. By the use of the system you will be able to determine your costs accurately and easily and every step you make thereafter, if in keeping with the suggestions offered will be on a safe and sane basis. Remember the series begins in the January issue of The Clay-Worker.

Goodwyn Institute will supply part of the Hy-Tex brick full range, mixed Caledonia shades used in the exterior of the hotel. The three lower floors will be of Bedford stone. They will also furnish a number of enameled white brick for the structure.

A. J. Cook & Co., Inc., Decatur street and the L. & N. R. R., Memphis, are at this time erecting an additional storage bin at their modern plant which covers almost a block in North Memphis. They have had a busy autumn and winter trade. They furnished much of the material used on J. Goldsmith & Sons Co. department store addition, E. J. Pearson, general contractor. They have furnished this year about 550 cars of sewer pipe on city contracts at Memphis. They also held this contract last year. They are now furnishing considerable sewer pipe for the improvements at the Memphis Artesian Water Co.'s plant, North Parkway. This is one of the largest jobs in progress in the city. Much brick, tile and pipe work figure in this job. The cost will be more than \$1,000,000. The contract for superstructure is held by D. D. Thomas & Son of Memphis. A number of sub-contracts were let in December, in fact, the total cost will be almost two million dollars.

Work on the Shrine ten story office building is in progress at S. Front street and Monroe avenue. Kaucher-Hodges Co., Exchange Bldg., Memphis, have the general contract. The building will be devoted to offices. There will be a large

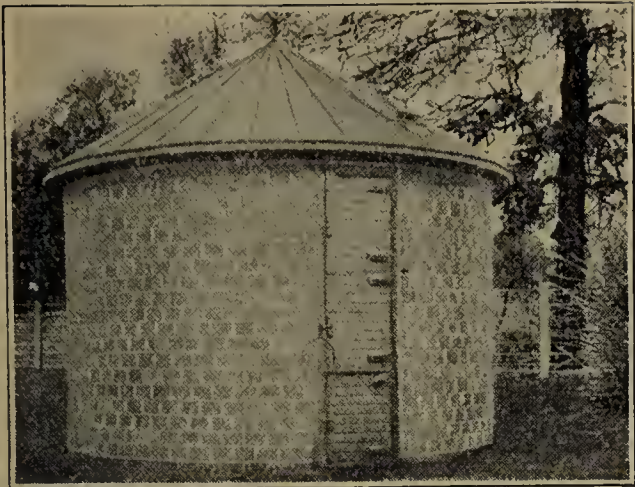
of Memphis. There will be further additions to the public school system in the early part of 1923. Work will probably go forward on a new Methodist Hospital at Union and Bellevue to take the place of the one on Lamar blvd. sold the government for a Veterans' Hospital. Some years ago a site was procured at Calhoun and South Second for a sub-post-office and while certain appropriations are to be made before the building is erected, it is said there is a good possibility of it being erected before a great while.

The dealers in brick, sewer pipe, terra cotta and tile products are quite active in every instance at Memphis. Local manufacturers are running and dealers receiving steady shipments.

The Central Mosaic Tile Co. on South Fourth street, Memphis, have been doing the floor and wall work on numerous new structures about Memphis. Many of the automobile homes on Monroe avenue and other streets are done in terrazzo tile.

John A. Denie & Sons Co. are finding big December activity in city and out of town trade in fireproofing materials, terra cotta, brick, etc. They are furnishing much of the material in the six story Catholic Club, North Third and Adams avenue, for which the steel superstructure has been completed several days and which building is to be completed early in the spring.

DIXIE.



HOLLOW BUILDING TILE

*A Department Devoted To
This Particular Branch
of The Clay Industries*

CHARTING HOLLOW TILE PROGRESS.

THE HOLLOW BUILDING TILE ASSOCIATION recently issued to its members graphic charts showing the progress and use of hollow tile as compared to progress in other building materials such as cement, face and common brick, lumber and lime. In this graphic comparison hollow building tile shows an increase of 212 per cent in 1920 as compared to 1909. Also it shows an increase in tonnage from 1,600,000 tons in 1911 to 2,579,068 tons in 1920. When the final figures are available for 1922 the showing should be considerably larger in hollow building tile tonnage. Meantime, however, the graphic charts furnished the members not only make an encouraging showing but they also furnish specific information on average prices of hollow building tile in comparison with that of ten other commodities excluding food stuffs. One of the things which this showing demonstrates is that hollow building tile, which was formerly considered more specifically as merely fire-proofing material for steel beams, and for flooring purposes, has steadily advanced until it is now recognized as one of the important building materials.

GROUP MEETINGS.

THE HOLLOW TILE BUILDING ASSOCIATION is giving special encouragement to group meetings and their attendance, and there is added interest to the mid-winter group meetings because most of them involve annual elections for Chairman and Vice-Chairman, and there will also be nominations for group directors. Aside from this special interest the group meeting idea itself is splendid and is in keeping with the expressed recommendations of students of association activities. It is being said now that in most all trade association activities more immediate and effective results are obtained from frequent group meetings where there is that intimate contact and that getting down to brass tacks which brings earnest consideration of many problems of the day in the different localities. Group meetings bring good definite results as well as help promote that intimate contact of each manufacturer with the other which makes for better understanding and heartier co-operation.

FRANK J. HUSE WITH GROUPS 4 AND 7.

ANNOUNCEMENT has been made that F. J. Huse will act as the Hollow Building Tile Association representative in groups 4 and 7, with headquarters at Memphis, Tenn. Mr. Huse, who is a graduate of the Massachusetts Institute of Technology, has had wide enough experience in the use of fire-proofing material to be well qualified for this work, and it

is thought his experience will prove invaluable in his new capacity, and those in these groups are advised to call upon him for assistance on any questions pertaining to the hollow building tile industry.

SLIGHT CHANGES IN STANDARD WEIGHTS.

SOME SLIGHT CHANGES have been authorized in standard hollow building weights and these will be covered in the revision of serial No. 22 which is to be issued shortly. The changes are as follows:

- 3x12x12 loadbearing tile, 3 cell—from 18 to 19 lbs.
- 4x12x12 loadbearing tile, 3 cell—from 20 to 22 lbs.

PROGRESS IN HOLLOW TILE RESEARCH.

REPORTS INDICATE that good progress is being made in the research work on fire resistance in hollow building tile and there will be some interesting reports forthcoming on the results soon. Other features of recent research work are as follows:

Special tile are now being manufactured with various forms of filler ranging from five to fifteen per cent by volume of the clay. The suggested fillers are such materials as ground corn stalk, coal dust, saw dust, etc. When these tile are received they will be subjected to the usual fire, compression and absorption tests and the results correlated with each other. These tests will enable us to determine quite definitely whether or not the addition of a filler to hollow tile will produce an article which offers sufficient fire resistance without a material loss in strength values and warrants this method of manufacture.

A special shape tile has been designed from which it is hoped to learn whether or not the design of the tile has any influence on fire resistance. In order to carry on this research work, however, it is necessary that a special die be made and it was recommended by the Standards Committee that the Association bear the expense of this die. The Association was authorized to incur this expense.

GOOD MEMBERSHIP WORK.

H. C. DOWNER, of the Malvern (Ohio) Clay Company, who is chairman of the Membership Committee of the Hollow Building Tile Association, has been doing some splendid membership mission work. He not only turned in a list of 20 new members, the largest list ever submitted at one time, but he is still at it strenuously having started the final drive in December with his goal being that of 100 per cent membership. His hope is to get most of these in by mail in order

to keep down the expense of field work and personal solicitation and he is getting out some letters that ought to bring them across. He speaks plainly, not only from the heart, but from actual experience, and the indications are that with the opening of the new year he will be close to the goal of 100 per cent membership.

In addition to a number of individual members added from time to time to list of the twenty turned in one report to the board of directors contains the following names:

Alabama Brick & Tile Co., Decatur, Ala.
 American Brick & Tile Co., Mason City, Ia.
 O. C. Barber Allied Ind. Co., Canton, Ohio.
 The Barron Brick Co., Chicago, Ill.
 Carlinville Tile Co., Carlinville, Ill.
 The Coal Clay & Rock Products Co., Akron, Ohio.
 Eastern Illinois Clay Co., St. Anne, Ill.
 Fairchilds Brothers Clay Co., Endicott, Nebr.
 Hancock Brick & Tile Co., Findlay, Ohio.
 Otto Heilman, Tiffin, Ohio.
 Mansfield Shale Products Co., Mansfield, Ohio.
 J. R. Martin Tile & Brick Co., Rosenberg, Texas.
 Mason City Brick & Tile Co., Mason City, Ia.
 Nebraska Clay Products Co., Omaha, Nebr.
 North Baltimore Clay Co., North Baltimore, Ohio.
 Ottawa Tile Co., Ottawa, Ohio.
 West Point Tile Co., West Point, Miss.
 Whitacre-Greer Fireproofing Co., Waynesburg, Ohio.
 Yankee Hill Brick & Tile Co., Lincoln, Nebr.
 York Brick & Tile Co., York, Nebr.

THE NEW YORK SITUATION

ACCORDING to the Dow Building Report for December 9, published by the Allen E. Beals Corporation of New York City, Hudson hard brick moved up to a base of \$15 to \$16, wholesale at the week-end, with fair indications of still further advances in the week starting December 11, especially in the face of delayed deliveries of steel and other basic commodities, establishes the potential strength of the winter building market.

Brick is expected to move up in price somewhat in December. Usually this change upward is due to charges incidental to covering the barge loads of brick as they tie up here for the winter and which include demurrage, dockage and watching for indefinite periods.

The price advance of last week was not due to these causes, but rather to a straight out demand for building material. There were eighteen barges at the wholesale dock on Friday, but twelve of these were withdrawn from the active sales list and went under cover, without quotation. What remained for sale went out readily at prices ranging from \$15 to \$16, and some were reported late Friday as going out at \$16.50 to customers specifying the highest grades.

Eighty-nine barge loads were being unloaded around the city, being carted to building operations in four boroughs of Brooklyn, Queens, Bronx and Manhattan. This is only a normal quantity as compared with before-the-war days, but as compared with the December movements of 1919, 1920 and 1921 it is excessive and bespeaks a building movement quite out of the usual volume for this time of the year.

Brick manufacturers say that there is a seasonable quantity of brick available for New York this winter. There is ample to protect the building public against a heavy speculative buying movement and at the same time there is not an inadequacy of supply that would warrant expectations of a runaway price movement.

Written for THE CLAY-WORKER.

THE CHICAGO SITUATION.



CHICAGO'S BUILDING record for 1922 is going to be substantially ahead of that made in 1921 when, in spite of industrial disputes and kindred obstacles, this city showed its first sign of getting back to the old stride which was temporarily lost during the war period.

During the early part of the year building permits for each week showed a gain over the corresponding period of 1921, ranging from 20 per cent. to as high as three times the number issued in the same period of the former year. During the months of July and August the record for the two years ran much the same with a little advantage for the current period, but during September and October there were two or three weeks when building activities fell behind even the 1921 showing. In the last six weeks, however, there has been a remarkable spurt in building and the record of comparative increase made in the earlier months is once more the normal standard.

It is not unlikely that the record of 1921 may be surpassed only in number of building projects begun, and not in the amount invested therein. If this proves to be the case it will be because, largely due to the splendid work of the Citizens' Committee to enforce the Landis award, construction costs in 1922 have been reduced materially below those of 1921. In fact, some feel that the slackening of activities during the summer and early autumn was in some part due to the warning issued by this committee urging a curtailment in building activities on the ground that existing high costs did not warrant investment with hope of reasonable interest thereon. While a vote of thanks and encouragement is due to ex-Judge Landis and the citizens' committee and the Landis award unions for doing all in their power to start building costs and living conditions back to a plane much nearer to the normal standard of prosperous pre-war days, it is impossible not to speculate as to how far back costs and prices may be expected to go. For about a year there was a marked reduction in the price of most clothing, but this fall the tendency has been once more slightly upward. Shoes and leather goods have come down somewhat, but not violently. Of ordinary foodstuffs, bread has had a real reduction; canned goods came down for a while, but are again well up toward wartime standards. Lard is down and most pork products, but many other meats are as high or nearly as high as ever. Fresh fruits and vegetables in the main are as high, or even higher than ever. Under these circumstances it is easy to see that wages cannot be much reduced, and already there is talk of an attempt on the part of the building trades for a higher scale when the present agreements expire next spring. This will make more trouble. In speaking of costs of things it is probably an exceedingly conservative statement that the prices received and profits enjoyed on those prices for clay-product building materials have never approached the prices exacted for lumber. Lumber prices never reduced as near to pre-war standards as did clay products and complaint about lumber's upward tendency has been frequent for at least half a year. It is entirely within the range of possibilities that we are still in a transition stage, muddling about until the operation of the inexorable law of supply and demand finally establishes for another (let us hope peaceful and prosperous) period. Prof. Charles J. Bullock, of Harvard University, recognized as a national authority on economics, in an address in the East a month or two ago, gave it as his opinion that a return to pre-war levels was an impossibility and that the cause for existing high costs was not so much due to the demands of any one group or line of producers, as it was to the fundamental fact, so he asserted,

that gold, the standard of the American dollar, is itself worth much less than it used to be, owing to greater production.

Chicago is showing the results of a year of better building and prospects for the coming year, unless marred by renewed labor troubles, are exceedingly bright. In the near downtown district growth along the new boulevard link, development of great importance is being planned.

The Chicago Tribune is planning to erect a magnificent structure of its own across from the now famous Wrigley building. In its efforts to equal the striking beauty of the Wrigley building with its wonderful tower, this one of Chicago's family of daily newspapers offered attractive prizes to architects of the world for designs and has accepted one of them as a model.

The Central Life Insurance Company of Illinois is to build a twelve-story office building at the southwest corner of Michigan boulevard and East Superior street.

Over in "Streterville," at the northwest corner of Pearson and Seneca streets, the Pearson hotel, costing \$2,500,000, and with accommodations for 310 guests, will be erected for residential and transient uses. This new hostelry will be of brick and stone, with ornamental front on all four sides. Another gold coast activity is an apartment building at DeWitt and Delaware places, costing \$1,500,000, also of brick and terra cotta.

Out on the south side in Woodlawn the Hayes hotel is beginning the construction of \$1,000,000 addition to its already large plant. At 14 North Dearborn street, in the loop district, the Covenant Club is to erect a million dollar home on the lines of an Italian palace.

On the West Side the Western Electric Company has improvements and additions to its already huge plant under way that will total more than \$3,000,000 in cost. The biggest unit will be a rod and wire mill. There also will be a wood-working unit to cost about \$1,000,000, including machinery, a \$100,000 machine shop and a number of buildings for miscellaneous purposes.

Not to be outdone by the rest of the city, the colored community is planning the erection of a \$750,000 hotel and theater for its own uses at the northwest corner of East Thirty-sixth street and Indiana avenue.

Hotels and apartment buildings of great and small cost are in process of construction and being planned for all over the city. Individual residences continue to lead numerically, and new subdivisions are again being opened up. There is ground for reasonable optimism. SCRIP.

WHITEWARE STUDY IN PACIFIC NORTHWEST.

IN THE INVESTIGATION of the white clays of the Pacific Northwest being made by the Seattle, Washington, experiment station of the Bureau of Mines, samples of kaolin were recently taken at Freeman and Mica, Washington, and at Joel and Troy, Idaho. The kaolins sampled will also be used in the refractory studies, in the hope that the quality of the fire brick from the companies operating in the district can be improved. The residual deposits of clay are more difficult to operate because of the lack of uniformity and the large quantity of decomposed schist and sand which are often in excess of the softened granitic material. Those deposits which have been at least partially water-sorted show more uniformity and greater concentrated quantities of white-burning clays. Several hundred pounds of feldspar were obtained from the old mica mines three miles north of Avon, Idaho. Heretofore, the feldspar has been thrown on the dump.

Unless the signs read wrong the machinery contingent will have a busy time of it through the winter and spring and will therefore prosper along with the clayworking industry itself.

THE GOOD OF TRADE ASSOCIATION

ONE OF THE FEATURE articles in the Factory, a magazine of management, for November, was that by Peter F. O'Shea dealing with the subject of what it profits manufacturers to get together.

He starts off by pointing out that while the detailed activities of trade associations differ with different trades they also exist for the ultimate purpose of contributing directly or indirectly to the profit making ability of the members. This end, however, cannot be attained without recognition on the part of members of the many things that can be done and co-operation to help accomplish the doing of these things.

This review covers a long list of subjects found among the specific activities of different trade associations, some of them being purely commercial, some being directed specifically at cost data, and some more specifically to problems of manufacture and that progress in manufacturing economy and efficiency which makes for better times, bigger business, and more profit, often at lower cost.

This is the phase of association work of particular interest to the members of the National Brick Manufacturers' Association, because it has always concerned itself more largely with problems of education and progress which pertain especially to the manufacturing and burning of clay wares. The activities have centered mainly upon giving publicity to and the expanding of ideas and discussions upon technical and practical matters in the manufacture of clay products, including among other things the matter of standardization which has been so much in the limelight since Secretary Hoover started the ball rolling at Washington.

Incidentally the author in this case quotes from Nathan B. Williams, counsel of the National Association of Manufacturers, the statement that the primary function of the trade association is one of education. There is no question that this is true, both in specific and in a broad general sense. No matter whether an association centers most of its activities on problems of manufacture and distribution, or on problems of merchandising credits and collections, the fact remains that the work is and should be educational. That by the way has been the slogan of the N. B. M. A. throughout all the years of its existence, to educate its members in the matter of new ideas and better methods in the manipulation, burning and distribution of clay wares. To realize that a great measure of good has come from this one has to but review the progress which has taken place in the clayworking industry during the past 25 or 30 years. A review of this progress and a study of the activities of the National Brick Manufacturers' Association cannot help but impress one that the annual convention sessions of this organization have not only helped materially in bringing out and giving publicity to new ideas and methods, but the discussions have helped to crystalize ideas into positive knowledge, and have contributed materially to a big order of progress with a smaller percentage of error in individual experimenting than would have been the lot had we been without this means of getting together and coming to a better understanding of the live questions of the industry from year to year.

And the record of the past is enough to give encouragement and promise of bigger and better things in the future, to indicate a greater need than ever for association work, and for the members of the trade getting together now and then to exchange ideas and find out just where they are at on the road of progress and what should be done next. Indeed we have come to the point of realizing that good trade associations are one of the essentials to the welfare and intelligent future progress of the industry, and this should bring with it that spirit of hearty co-operation which in turn insures better progress and bigger things in the future.



OVERCOMING DIFFICULTIES IN ASPHALT FILLED BRICK PAVEMENT CONSTRUCTION DURING WET OR COLD WEATHER

WHEN a brick pavement is being constructed with asphalt filler, wet or damp bricks play such an important part in the success or failure of the application of this filler that special study has been given to the problem with a view of devising some scheme to dry them promptly.

Invariably the brick are piled on the road many days in advance of the actual date of laying, and during such time are often saturated by heavy rains, and, when laid in the street, a big percentage are too wet to permit the asphalt to properly penetrate and adhere to the brick.

Another condition often encountered is to have a section of the brick laid and rolled and then to have a heavy rain come suddenly, thoroughly wetting the entire pavement before it is possible to apply the filler.

Steam is immediately formed when the hot asphalt, at a temperature of 360° F., is applied to the wet or damp brick. This steam prevents the asphalt from properly penetrating the joints and from adhering to the sides and surfaces of the bricks. Asphalt applied under such conditions can readily be peeled off the surface and drawn from the joints.

Laying Brick Pavements in Winter Months

Many engineers, public officials and contractors have a mistaken idea that asphalt filled brick pavements can or should be laid only during the hot summer months. It is true that in winter weather the asphalt will cool more quickly when applied to the cold brick than it will when applied to a brick warmed by the summer sun, but this difficulty can in a large measure be overcome by applying the asphalt over a smaller area at one time and squeegeeing it immediately into the joints.

During the spring months of March, April and May and the fall months of October and November, rainy, cloudy weather and cool nights should be anticipated, and the contractor should plan to apply the asphalt between the hours of 11 and 3. The contractor, at a small expense, could cover a couple of days' supply of bricks with tarpaulins or tar paper and thus protect the bricks from getting wet.

In spite of such precautions, and regardless of the season of the year, some of the bricks will be wet or damp, possibly an individual brick here and there, possibly an area of several yards. While waiting for these brick to dry, a heavy rain may delay the work for days. If you "take a chance" and apply the filler, you know beforehand that you are not getting a good job, and you are only inviting future criticism of your work.

H. M. Day, City Engineer of Canonsburg, Pa., when applying asphalt filler in the cool weather of November during the past year, encountered many such difficulties due to wet bricks. He purchased from the Hauck Manufacturing Company of Brooklyn, N. Y., a portable oil burner, expecting that with this apparatus and a steel hood to hold and deflect the heat to the pavement, he could warm the bricks and thus secure better penetration of the filler. However, the contractors on the work found that a more limited application of the asphalt over the brick, and a speedier operation of the squeegees, gave the desired penetration of the asphalt between the points of the cold bricks, but they were troubled and hampered by wet bricks in certain areas.

One man was then assigned to the Hauck Burner, with instructions to direct the flame on these wet areas and to hold it there until the bricks were thoroughly dried. The results were remarkably successful. Holding the burner about a foot away from the brick for a few seconds, and walking slowly over the pavement directing the flame at the apparent wet spots, repeating the operation where some particularly wet brick did not respond to the first treatment, soon dried out all the bricks to such an extent that, when the asphalt filler was applied, it penetrated readily into all of the joints, and the thin film of asphalt remaining on the top of the bricks adhered so tightly that it was impossible to peel it off.

A contractor on another project, who had laid a large area of brick and had been caught by heavy rains, used successfully four burners, drying both the bricks and the granulated slag bed and was thus able to complete his work early in December.

Conditions such as these are not unusual in any section, and each city engineer and contractor is brought face to face with such problems on every project. A little care and foresight will often avoid a delay that not only costs the con-

tractor extra money for which he is not compensated, but that also costs the city in having the street closed longer than is necessary.

The use of a burner or dryer on an asphalt filler brick paving project is desirable at all seasons of the year to insure that all sections of the pavement are dry when the filler is applied. The contractor should take every precaution to keep his bricks dry and cut down the use of the burner, but, compared to the cost of the delays that might ensue from lack of it, its use is justified.—Courtesy of Eastern Paving Brick Manufacturers' Association.

HARVEY ADAMS' CAR GOES ON A SPREE.

The next time Harvey Adams, of the Adams Building Association and Danville Brick Company, Danville, Ill., starts a motor car, he will ascertain whether the clutch is released and whether it is out of gear. Failure to do this cost him a goodly sum. He recently purchased a new, high priced car.



Application of Asphalt Filler on Three-inch Vertical Fiber Brick at Clarksburg, W. Va.

The electrical apparatus was not working according to his liking. He stopped at a garage to have an inspection made. "Start 'er up and let's see how she goes," said the mechanic. Mr. Adams did not get into the car, merely reaching in the door and pushing the starter button. The motor caught hold at a half turn. The car was in reverse gear. It quickly backed up, smashing the car back of it, tearing a fender therefrom, and whirled across the street, backing into another. But for the second car, the Adams car would probably have kept going, right through a plate glass window.

THE PRIMARY FUNCTIONS.

IN A STORY of his life and work by Henry Ford in collaboration with Samuel Crowther, published in McClure's, agriculture, manufacturing and transportation are named as the primary functions without which community life would be impossible.

"Raising things, making things, and carrying things, are as primitive as human needs, but yet as modern as anything can be."

Our ideas may differ as to how we may best preserve and encourage each of these, but there is no question in the mind of any sane man that each of these great divisions of in-

so as to draw its share of good manhood and keep in healthy condition to protect the needs and welfare of mankind.

PAVING BRICK MANUFACTURERS' ANNUAL CONVENTION.

THE NINETEENTH ANNUAL MEETING of the National Paving Brick Manufacturers Association was held December 12 and 13, Cleveland, O., with Hotel Cleveland headquarters.

About sixty members and guests were present, including plant superintendents, engineers, etc. Every session was well attended and a keen interest in the proceedings was manifested throughout.

The convention was called to order by President O. W. Renkert Tuesday morning, Parlor B. Cleveland Hotel, who introduced the first speaker, R. M. Hudson, Assistant Chief, Division of Simplification, United States Department of Commerce, Washington, D. C. His subject was, "Some Problems in Paving Brick Simplification." He reviewed the work done in the simplification of paving brick sizes to date, pointed out the advantages of having a small number of definite standard sizes, on which a manufacturer could concentrate, and spoke of the value of it from the standpoint of advertising, for where an individual would boost his special size before, with the uniform standard, all could boost collectively with more strength and to a better purpose.

The address was followed by a discussion by R. T. Hutchins, of the Mack Manufacturing Company, which emphasized the important points made by the speaker.

"Progress Report on Clay Products Research" was the title



Applying Asphalt Filler to Brick Pavement at Braddock, Pa.

of the talk by G. A. Bole, Superintendent, Ceramic Experiment Station, United States Bureau of Mines, Columbus, O. Mr. Bole very ably presented an outline of the experimental work accomplished and that being carried on in behalf of the paving industry by the able corps of Ceramists on the United States Bureau of Mines Laboratory car. He told how they attack their several problems and exhibited charts which plotted the progress made. This was of keen interest to the plant superintendents present, of whom R. C. Wallis, of Metropolitan Paving Brick Co., and F. E. Schultz, of Medal Paving Brick, Co., lead in the discussion. Mr. Schultz presented figures which he had gleaned from the progress report, which showed that the tests thus far carried out promised a saving which varied from \$10,000 to \$40,000 per year in fuel and time. Mr. Bole stated that they had estimated that the minimum

saving in adopting new methods suggested, over old, would be \$2,000 per month.

"Practical Value of Statistical Information" was a short and interesting address by D. H. Hunter, Secretary Steel Barrel Manufacturers Association, and the Fire Extinguisher Exchange, Cleveland, O. He told what his associations were doing in gathering and using statistics; that the work had been approved and endorsed by the United States Department of Commerce and all legal difficulties had been avoided. (The N. P. B. M. A. is considering the collection, tabulation and distribution of statistics of interest in their industry.)

A delightful luncheon was served in the adjoining convention hall, after which the diners were addressed by Robert Hoffman, Commissioner of Engineering, city of Cleveland, on the subject, "The Association Field Man from the Viewpoint of the City Engineer." He declared that the field man's work was very valuable, and that the city engineer welcomes his assistance and advice. However, he warned the association field man against making extravagant claims for any particular material, that he should know his materials, qualities and limitations, and not make the grievous mistake of claiming more for them than could be fulfilled. H. D. Brunning, Engineer, Ohio Paving Brick Manufacturers' Association, lead the discussion and detailed the importance of the city engineer's work and the need for keeping in close touch with him.

The room was darkened and the United States Department of Agriculture's film for the United States Bureau of Public Roads was shown. This film, including several scenes from different paving brick plants, illustrated complete process of manufacture paving brick and the construction of the various types of brick pavements.

This was followed by an address by the retiring Secretary, M. B. Greenough, on the subject, "The Future of the National Association." He emphasized the need of co-operation, and after reading the minutes of the first meeting held eighteen years previous, at Cincinnati, O., in which the principles were set out that proved to be identical to a great extent, with the present ideals, he stated that the two cardinal principles were advertising to increase use and research work to reduce cost of production.

After a little social session, some of the delegates were taken on an automobile inspection trip to points of interest in Cleveland.

The joint meeting of the Board of Governors and the Policy Committee considered the budget and operating policy for 1923, which were presented at the Wednesday morning session.

Tuesday evening a delightful banquet was given at the Cleveland Hotel by the N. P. B. M. A. Vaudeville stunts were staged at frequent intervals, but the hit of the evening was the informal address by George M. Graham, Vice-President of Chandler Motor Car Co., Cleveland, O., on "The Automobile and Highway Development." He gave the history of transportation for the past 120 years, bringing it step by step up to the present day conditions, and showed how the automobile and the highway were today two almost inseparable units.

Wednesday morning's session was one strictly of business routine. O. W. Renkert reviewed the work of his administration; C. C. Barr gave the Treasurer's report; M. B. Greenough read Secretary's financial statement; W. P. Blair presented a detailed story of the year's activities, including the four inspections held at different intervals on Bates Road Experiment, Springfield, Ill., while Secretary-elect E. E. Duff, Jr., and Assistant Secretary S. A. Knisley read paper on "Getting Acquainted" and "Advertising and Education," respectively.

At the noon luncheon Mr. Leon C. Herrick, Director of Highways and Public Works, State of Ohio, made an address, "Some Factors to Be Considered in the Design of Brick Pavements from the Engineer's Standpoint."

He emphasized the necessity of having a tax on gasoline for maintenance of highways. He declared that \$5,000,000 was collected in Ohio in 1922 with the half mill levy; that the license tax provided \$7,000,000, totaling \$12,000,000, and that \$9,000,000 went for maintenance, while only \$3,000,000 went for new construction. He stated that it is necessary to stop building these weaker types of roads which call for this costly maintenance, and that the gasoline tax of 1c to 2c per gallon as a temporary means for raising the special fund desired for maintenance of reconstruction had already found favor in seventeen states, while others will soon have this simple means of making the man who uses the roads most more nearly pay his share of maintenance.

The Board of Governors endorsed a plan for raising a special fund among the individual manufacturers for the purpose of conducting a consistent trade paper advertising campaign during 1923. The present Board of Governors consists of five members, one each appointed from each of the five divisions of the association. The election of President is made by the Board at their next meeting, which will probably be in March. In all likelihood M. B. Greenough will be the next President. He stands in high regard with the paving brick manufacturers, as was testified by the beautiful watch and chain presented to him at the banquet.

ANNUAL MEETING OF THE NEW JERSEY CLAY-WORKERS' ASSOCIATION AND THE EASTERN SECTION OF THE AMERICAN CERAMIC SOCIETY.

THE CLAY-WORKERS of New Jersey gathered at Rutgers' College, New Brunswick, Tuesday, December 12th, on the occasion of the annual convention, and enjoyed a pleasant and profitable day.

There was the customary annual address by the president, R. H. Minton, which was followed by a symposium on "The Casting of Ceramic Bodies."

At noontime lunch was served in the Ceramic Building, preceded by a reception to the students of Rutgers' College who were guests for the occasion.

In the afternoon there was an address by R. C. Purdy, general secretary of the American Ceramic Society, who also served as master of ceremonies in the event of the occasion, being the presentation to the University of a life-size photograph of Dr. Edward Orton, given by some of his former students at the Ohio State University. It was a very pleasing and impressive incident.

A discussion of the subject "Oil-Firing of Kilns," proved of more than ordinary interest.

The following officers were elected for the ensuing year:

Officers Elected.

Andrew Foltz, Lambertville Pottery Co., Lambertville, N. J., President.

Charles W. Crane, 17 Battery Place, New York City, Vice-President.

Charles A. Bloomfield (Ex-President) Metuchen, N. J., Counselor.

G. H. Brown, Dept. of Ceramics, Rutgers' College, New Brunswick, N. J., Secretary-Treasurer.

Margaret G. Hartman, Dept. of Ceramics, Rutgers' College, New Brunswick, N. J., Asst. Secretary.

THOSE IN ATTENDANCE

G. H. Brown, Ceramics Department, Rutgers' College, New Brunswick, N. J.

O. O. Bowman, 2nd, Bowman Coal, Co., Trenton, N. J.

Dr. F. F. Frederick, School of Industrial Arts, Trenton, N. J.

Harry B. Rosin, School of Industrial Arts, Trenton, N. J.
 Louis Pohle, Trenton, N. J.
 S. Bedson, Lambertville Pottery Co., Lambertville, N. J.
 Chas. T. H. Phillips, Sneyd Enameled Brick Co., Trenton.
 Chas. W. Saxe, Norton Co., Worcester, Mass.
 R. H. Minton, General Ceramics Co., Metuchen, N. J.
 R. L. Clare, Federal Terra Cotta Co., Woodbridge, N. J.
 August Staudt, Perth Amboy Tile Works, Perth Amboy, N. J.
 Abel Hansen, Fords Porcelain Works, Perth Amboy, N. J.
 H. E. Maddock, Trenton, N. J.
 A. S. Campbell, East Liverpool, O.
 A. C. Cochran, Cochran-Drugan Co., Trenton, N. J.
 C. W. Hill, Atlantic Terra Cotta Co., Perth Amboy, N. J.
 Donald Hagar, Mosaic Tile Co., Matawan, N. J.
 George Simcoe, Perth Amboy Tile Works, Perth Amboy, N. J.
 Charles W. Crane, 17 Battery Place, New York City.
 W. J. J. Bowman, Trenton, N. J.
 Eric B. Turner, Trenton Flint and Spar Co., Trenton, N. J.
 T. A. Klinefelter, Trenton Fire Clay & Porcelain Co., Trenton.
 John B. Maddock, Trenton, N. J.
 J. M. Gilfillan, Trumbull Electric Co., Trenton, N. J.
 J. A. Williams, Mitchell-Bissell Co., Trenton, N. J.
 R. B. Eldridge, Trenton, N. J.
 Francis H. Burroughs, 2328 S. Clinton St., Trenton, N. J.
 Joseph Boughey, 5113 Monmouth St., Trenton.
 Fred A. Whitaker, General Ceramics Co., Keasbey, N. J.
 Kenneth E. Ward, Newark, N. J.
 Andrew Foltz, Lambertville Pottery Co., Lambertville, N. J.
 Taine G. McDougal, Flint, Mich. (Champion Ignition Co.)
 James Prosser, Trenton, N. J.
 Charles A. Bloomfield, Metuchen, N. J.
 William Chell, Empire China Works, Brooklyn, N. Y.
 E. V. Eskesen, N. J. Terra Cotta Co., Perth Amboy, N. J.
 Geo. C. Crossley, United Clay Mines Corp., Trenton, N. J.
 C. C. Engle, United Clay Mines Corp., Trenton, N. J.
 M. C. Hendrickson, United Clay Mines Corp., Trenton, N. J.
 Leslie Brown, Lenox, Inc., Trenton.
 R. J. S. Barlow, Roessler & Hasslacher Chem. Co., Trenton, N. J.
 L. S. Briggs, Lenox, Inc., Trenton.
 F. W. Dinsmore, Imperial Porcelain Works, Trenton.
 C. S. Maddock, Jr., Thos. Maddock's Sons Co., Trenton.
 Enoch Mountford, General Chinaware Corp., Trenton.
 James R. Smith, N. J. Porcelain Co., Trenton, N. J.
 Otto W. Will, Roessler & Hasslacher Chemical Co., Perth Amboy, N. J.
 W. L. Howat, Atlantic Terra Cotta Co., Perth Amboy, N. J.
 H. J. Knollman, Abrasive Co., Philadelphia, Pa.
 A. I. Appelbaum, Thac Ind. Products Corp., Trenton, N. J.
 Carl Chumainy, Arfberg, Bavaria.
 Werner Malsch, Roessler & Hasslacher Chem. Co., New York City.
 George W. Dilks, Jr., Philadelphia, Pa.
 Francis W. Walker, Jr., Beaver Falls Art Tile Co., Beaver Falls, Pa.
 B. K. Eskesen, Matawan Tile Co., Matawan, N. J.
 H. D. Callahan, Keyport, N. J.
 J. W. Hepplewhite, Manville, N. J.
 E. A. Toohey, Johns-Manville Co., Manville, N. J.
 D. Raymond Edgar, Edgar Bros. Co., Metuchen, N. J.
 I. R. Edgar, Edgar Bros. Co., Metuchen, N. J.
 L. E. Riddle, Edgar Bros. Co., Metuchen, N. J.
 S. G. Brinkman, Fords, N. J.
 R. E. Anderson, Robertson Art Tile Co., Trenton, N. J.
 A. D. Forst, Jr., Robertson Art Tile Co., Trenton, N. J.
 John M. Kreger, Woodbridge Ceramic Corp., Woodbridge, N. J.
 Chas. Howell Cook, Cook Pottery Co., Trenton, N. J.
 C. A. O'Loue, Trenton, N. J.
 C. H. Lovett, Cook Pottery Co., Trenton, N. J.
 D. H. Applegate, Jr., Kreischer Clay Products Co., Tottenville, N. Y.
 R. N. Long, Federal Terra Cotta Co., Woodbridge, N. J.
 J. D. Andrews, Brown Instrument Co., New York City.
 Louis Quaglino, 401 Vernon Ave., Long Island City, N. Y.
 Ross C. Purdy, Columbus, O.
 Howard Thayer, Tottenville, N. Y.
 L. R. W. Allison, Newark, N. J.
 A. R. Campbell, Metuchen, N. J.
 Ira E. Sproat, R. T. Vanderbilt Co., New York City.
 Alfred Mathiasen, Matawan Tile Co., Matawan, N. J.
 Chas. H. DeVoe, Old Bridge Enam. Brick & Tile Works, Old Bridge, N. J.
 S. O. Conkling, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.
 E. C. Hill, Conkling-Armstrong Terra Cotta Co., Philadelphia, Pa.
 W. H. Griswold, N. J. Terra Cotta Co., Perth Amboy, N. J.
 C. C. Clarke, Rutgers College, New Brunswick.
 H. T. Coss, Rutgers College, New Brunswick.
 Margaret G. Hartman, Assistant Secretary, New Brunswick, N. J.
 Irving Hansen, Fords Porcelain Works, Perth Amboy, N. J.
 Henry Hansen, Fords Porcelain Works, Perth Amboy, N. J.
 G. M. Tucker, N. Y. Architectural Terra Cotta Co., Long Island City, N. Y.
 R. V. Tailby, Dept. of Ceramics, Rutgers College, New Brunswick, N. J.
 E. J. Prentice, Dept. of Ceramics, Rutgers College, New Brunswick, N. J.

BRICK AND BUILDING NEWS OF EVANSVILLE AND SOUTHERN INDIANA.



MILD AND OPEN weather which has prevailed this fall and winter in Evansville and other towns in Southern Indiana has greatly stimulated the building game and as a result building operations now are more active than usual at this season of the year. There is a great deal of construction work under way and a great deal more being planned for the coming

year. At Evansville plans have been drawn for a new addition to the city building that will cost in the neighborhood of \$75,000 to \$100,000, and it is expected the contract will be let along about the first of the year. The contract for a new addition to the Evansville Packing Company has been let and it is expected that work will start within a short time. The addition will be three stories and a basement and the estimated cost will be \$75,000. It is expected that several new buildings for the Evansville College will start during the coming year.

Contracts representing an approximate expenditure of a quarter of million dollars were let on December 19th, for extensions of the Cannelton Sewer Pipe Company's plant at Cannelton. These extensions, according to Henry M. Clemens, vice president and general manager of the company, will provide for 160 per cent. greater manufacturing capacity for the company. The new improvements will give employment to at least fifty more men. Among the improvements to be made are the construction of a brick, concrete and steel building, 62 feet by 208 feet, four stories in height; eight large kilns; a radial brick chimney 120 feet high; enlarged boiler and machine rooms with complete new power plant and 1,000 feet of added switching facilities. Work will be started immediately after the letting of the contracts, which call for completion by June or July, when the enlarged works will increase the annual output of 18,000 tons to at least 35,000 tons. The largest size pipe, 36 inches, can then be turned out, placing the Cannelton plant on a par with any other establishment in the Middle West or South. The sewer pipe factory has for years been one of the largest industries in Cannelton.

Clarence Schutz, president of the Best Brick Company at Evansville, took a leading part in the Scottish Rite convocation of the Valley of Evansville, held during the past week at Evansville, that attracted hundreds of Masons to that city from Indiana, Illinois and Kentucky.

L. A. Folsom, brick manufacturer at Boonville, Ind., has returned from a business trip on the road. He reports that business conditions are looking up and in his opinion 1923 is going to be a very good business year.

Aaron M. Weil, head of two of the largest potteries in Evansville, who has been in poor health for the past year or two, is steadily improving, much to the gratification of his many friends.

The city of Evansville will start developing the Helfrich tract of land some time during the coming year and it will be converted into a beautiful park. The land was purchased from Michael Helfrich, a well known pottery manufacturer of that city.

Henry C. Kleymeyer, president of the Standard Brick Manufacturing Company of Evansville, and head of the Chamber of Commerce of that city, is still working on his plans to give Evansville a modern rail and river terminal. He has interested many of the business men of that city in his plans and is confident that it is but a question of time until Evansville will have one of the finest terminals to be found along any of the rivers in the United States.

A HOOSIER.

RECENT PATENTS IN THE CLAYWORKING INDUSTRY.

[Full details and specifications of the following patents may be had by addressing The Commissioner of Patents, Washington, D. C., and enclosing ten cents for each patent wanted. In ordering, give patent number only.]

No. 1,434,662. Brick Machine. Charles L. Norton, Newton, Mass., patentee. Patent assigned to Refractories Machinery Manufacturing Co., Pittsburgh, Pa.

A machine for moulding plastic shapes comprising a mould movable in a path comprising an arcuate portion, an open topped pallet pan for presenting a cover member in position for engagement with said mould while traversing the arcuate portion of its path, and means for causing said mould and pan to travel at the same speed.

No. 1,434,730. Kiln for Firing Pottery. Charles F. Bailey, Lawton, Eng., patentee.

In a pottery kiln, an arched passage, a kiln arranged at each side of the passage, each kiln being provided with a fireplace arranged crosswise of it and adapted to be fired from within the said passage, and a third kiln arranged above the said passage and provided with a chimney, all three kilns being provided with heating flues extending around them and connecting the two fireplaces with the said chimney.

No. 1,434,796. Air Seal for Kilns. William F. Sellers, Brandywine Hundred, Del., patentee.

In combination with a rotary cement kiln and a kiln housing into which the kiln opens, means for sealing the space between the end of the kiln and the housing, consisting of a cylinder surrounding the opening into the housing and secured to the housing, in combination with a flat ring extending inward from and at right angles to said cylinder and movable longitudinally therein, spaced flanges secured to and extending outwardly from the end of the kiln and rings made up of detachable sections detachably secured on the inside of the flanges and extending outwardly therefrom over the inner edge of the inwardly extending ring aforesaid.

No. 1,434,877. Arch Brick. John H. Dempsey, Cleveland, Ohio, patentee.

The combination with a boiler firebox, and arch tubes therein, of an arch supported on the tubes and composed of a series of independent refractory bricks, said bricks having longitudinal grooves receiving the arch tubes and resting thereon, said bricks having flat lower faces and transversely arched upper faces, said bricks having openings therein and having recessed edges, whereby passages are provided through the bricks for the smoke and gases and the smoke and gases caused to contact with the boiler tubes, and half bricks located adjacent the walls of the firebox.

No. 1,434,378. Brick. John E. Evans, Chicago, Ills., patentee.

A brick of the character described comprising converging portions for the corner at two adjoining walls of a structure, a flange provided on an inner peripheral edge of said converging portions extending substantially from end to end of said brick, and a recess formed in the opposite inner peripheral edge of said converging portions extending substantially from end to end of said brick and adapted to receive the aforementioned flange of another contiguous brick when arranged in superimposed relation therewith in a structure, a groove formed in the periphery of said brick extending substantially from one end to the other of one side thereof, and a wedging tongue formed on the periphery of said brick extending substantially from one end to the other on the opposite side thereof adapted to be received in interfitting wedging relation in the aforementioned groove in another contiguous brick when arranged in superimposed relation therewith in a structure.

No. 1,435,542. Brick. Robert F. Martin, New York, N. Y., patentee.

In circular chimney stack construction, a substantially wedge-shape block whose inner and outer faces are arcuate and whose radial faces are provided with centrally and circumferentially arranged interfitting tongues and grooves, the block being further provided with vertical sets of bores circumferentially and radially arranged, the inner and outer sets of bores

being substantially small in area, resulting in thickened burden bearing walls, the middle set being arranged in the tongue and the radial portions of the block and between the inner and outer bores.

No. 1,435,200. Refractories Projector. William H. Blatchley, Pittsburgh, Pa., patentee.

In an apparatus of the class described, a scoop for receiving granular refractory material and discharging it into a furnace, said scoop comprising a vertical rear wall, perforations near the bottom of said wall, and a screen for said perforations.

No. 1,436,551. Structural Brick. Isaac V. Van Duzer, Cazenovia, N. Y., patentee.

A one-piece double brick composed of similar rectangular parts of substantially equal width and surface area integrally united edge to edge in the same plane, each part being offset longitudinally relatively to the other part a distance substantially equal to its width.

No. 1,435,201. Refractories Projector. William H. Blatchley, Pittsburgh, Pa., patentee.

A power driven device for projecting granular refractories into furnaces, comprising a normally rearwardly tilted receptacle for receiving and holding the refractory material, a guideway comprising inclined tracks, projections attached to the receptacle and engaging said guideway, the guideway being inclined downward at its outer end whereby to give the receptacle a forward tilt at the end of its forward travel.

No. 1,435,094. Dry Kiln. Murrell C. Warren and Julius J. Krohn, Arcata, Cal., patentees.

A progressive kiln comprising a housing, means for directing the material to be dried therethrough, a group of heating elements lying beneath the material at one point of its travel through the housing, a group of heating elements below the material on either side at another point of its travel through the housing, and a pair of vented baffles at each side of the material between the planes of the groups of heating elements throughout the length of the kiln.

No. 1,436,254. Mortar Rake for Bricklayers. Charles W. Henry, Jr., Vandergrift, Pa., patentee.

A raking tool having a handle portion, an inclined portion at one end of the handle portion, said inclined portion also being offset laterally from the handle, a transverse guide member on the end of the inclined portion which extends to one side thereof, and a raking tongue angularly disposed on the transverse guide, said guide being adapted to bear against the face of blocks being laid when the tongue is raking between the blocks.

No. 1,434,612. Brick. Anias F. Hamilton, Streator, Ills., patentee.

A wall made up of a plurality of blocks arranged in superimposed relation and each having a projecting side facing formation, one end and one side edge portion of which extends beyond the adjacent end and side of the body thereof and its other end and side portions being disposed inwardly with respect to the related end and side of the body a relatively greater distance than its first mentioned side and end portions extend beyond the body portion, said blocks being so disposed that all edges of the facing formation thereof are relatively spaced apart and the joints between the body portions of the blocks are covered thereby.

No. 1,435,463. Means for Making Bricks. George A. Glenn, Lawndale, Pa., patentee.

A mold for making bricks or blocks comprising a rectangular frame having transverse partitions and projecting brackets about one of its peripheral edges, a false bottom for each mold constituted by said transverse partitions, said false bottoms being disposed in a common plane and supported in the rectangular frame by a cross-bearer and opposed standards outside the same, spaced cam paths intermediate said standards connecting the false bottoms and cross bearer, a multiple core grid secured centrally longitudinal of the rectangular frame and having a plurality of core members projecting through correspondingly shaped apertures in the false bottoms for producing apertured bricks or blocks, and manually operable rockable members connecting the rectangular frame brackets with the cam paths whereby said rectangular frame may be moved rel-

ative to the false bottoms to release the molded bricks or blocks whilst exerting a downward thrust evenly thereover.

No. 1,436,745. Means for Forming Side-Cut Brick. Harry Winter, Springfield, Ills., patentee.

In a machine for cutting and forming side-cut brick at one operation, a platen consisting of a plurality of units spaced apart from each other, each unit comprising edge formers adjacent to and parallel to edges of the unit.

No. 1,437,054. Apparatus for and Method of Making Building Block. Arthur C. Hatch, Duluth, Minn., patentee.

The method of making building blocks which comprises placing division plates at predetermined intervals in molds capable of holding a plurality of blocks, pouring block-forming materials in the plastic state into the spaces between division plates until said spaces are filled, and, after the material has hardened, progressively removing the division plates and building blocks, alternately removing a division plate and then the adjacent block, the block being removed by swinging its free end upwardly, the contour of the block permitting such swinging without damaging thrust between the next division plate and the adjacent face of the block.

No. 1,437,077. Hollow Building Block. Robert L. Rutzler, Charlotte, N. C., patentee.

A building block comprising a top wall, two pairs of vertical walls depending therefrom, each pair being located toward opposite side edges of the top wall whereby a middle air space is produced, a bottom wall connecting the walls of each pair of vertical walls, and an inverted arch shaped bottom wall connecting the inner members of each pair of vertical walls.

No. 1,437,135. Brick Mold. James C. Dildine, Cameron, Mo., patentee.

A mold comprising a base, a plurality of clamping blocks, a flexible element extending through the blocks at their ends and upon which the blocks are capable of sliding, partitions disposed between the opposed longitudinal faces of the blocks, and means for holding the blocks into clamping engagement with the partitions.

No. 1,437,385. Method and Apparatus for Kiln Drying. Moritz L. Mueller, Seattle, Wash., patentee.

The herein described improvement in the art of drying lumber in a kiln having a trackway extending longitudinally thereof and an air discharge conduit lying between the rails of the track and extending in substantial parallelism therewith, and provided with openings discharging air under pressure upwardly at a number of points in its length, which improvement consists of piling lumber upon trucks with the successive layers of lumber spaced from each other to leave a plurality of lateral air passages therebetween, said lumber being so piled as to leave a longitudinally elongated central flue in each pile of lumber which is constricted upwardly and substantially closed at the top to thereby cause air delivered into the lower part of said flue to pass through said lateral openings and introducing said trucks into said kiln upon the tracks so that air from the air discharge conduit will be delivered into the elongated flues of the piles of lumber at whatever point upon the trackway they may be positioned.

TRADE-MARKS REGISTERED

No. 161,795. Lancaster Iron Works, Inc., Lancaster, Pa. Trade-mark registered for brickmaking machine.

No. 168,169. Quigley Furnace Specialties Co., New York, N. Y. Trade-mark registered for name "Mono-Line" for refractory material for lining structures subject to high temperatures.

We may be on the top of another peak and need a little caution, but with a little safe driving the outlook is good.

MISSOURI HAPPENINGS.



A. P. GREEN FIRE BRICK COMPANY of Mexico, Mo., has made arrangements to ship clay from New Florence, Mo., to their plants in Mexico. Fred Hume has been placed in charge of the work and he has a large force of men and teams at work getting out the clay.

The record of shipment of the Fulton Fire Brick Company at Fulton, Mo., for the first 22 days of November totaled 126 carloads of fire brick products, while the biggest previous month's shipment was 120 carloads. Orders on hand assured the officials that the record for the first 22 days would be maintained to the end of the month. Besides breaking shipping records the company also is breaking payroll records and one day in November the men at the plant earned almost \$2,000. C. C. McNamee said that the company could handle a much larger force than at present but the men are hard to get because the housing facilities in Fulton are such that they cannot get homes in which to live.

Henry Schaumburg, 76 years old, who was in the brick and contracting business in Hermann, Mo., for many years, died in St. Louis recently. He erected some of the largest brick buildings in Hermann, including the St. Paul's Evangelical Church and the city hall. His wife preceded him in death sixteen years. Four sons and three daughters survive.

The Penroad Coal Mining Company, which has been incorporated at Sedalia, Mo., with a capital stock of \$30,000, will also mine and sell clay and manufacture clay products. The shareholders of the concern are V. C. Bay, I. F. Holly, E. H. Milton, J. G. Love, H. E. Fricke, F. E. Hoffman, Sr., E. H. Shyre, J. E. Cannaday, W. L. Sprecher, C. S. Marshall and E. Schwald.

The Coates Brick and Tile Company of Kansas City, Mo., has filed articles of incorporation with Secretary of State Charles U. Becker at Jefferson City, with a capital stock of \$15,000. The company will manufacture and sell brick and tile. The incorporators are S. J. Moorhead, W. W. Coates and A. C. Kickels.

A vitrified tile and brick company and a paving brick company, both of Kansas, were found guilty of entering an unlawful combine to increase the costs of bricks to Reno county, in its extensive road program. The trial was held in the district court and was the result of indictments returned by a grand jury more than a year ago. One other concern, indicted at the same time, was eliminated from prosecution through the court's instructions. The jury that heard the case deliberated five hours before returning a verdict.

No announcement of the future plans of the defendants has been made but it is expected that an appeal will be taken in the event a new trial is denied. The offense is punishable with a fine of \$100 to \$1,000.

The verdict was termed a moral victory by Judge F. L. Martin, special prosecutor, representing the attorney general's office of the state of Kansas. He pointed out that it would aid in curbing other illegal combines. A similar case against five cement companies was continued to the January term of court.

The case against the third brick company was dismissed because of the statute of limitations. All cases against the individuals of the company were dismissed so they could be used as witnesses for the state.

Harry Tidd, contractor and former representative of the Western Paving Brick Association in this city, was chief witness for the state. He told of the transactions leading up to the circulation of hard road petitions in that county in 1918. He said that a Hutchinson business man and a Great Bend editor, indicted together with the brick companies, were paid to circulate petitions for a brick pavement. Counsel for the defense asserted that hiring of local representatives was a part of the war between the different materials companies and did not constitute an infraction of the statutes.

PAUL J. PIRMANN,
Fulton, Mo.

OFFICIAL ANNOUNCEMENT



THIRTY-SEVENTH ANNUAL CONVENTION TO BE HELD AT CLEVELAND, O., FEB. 5 to 10, 1923.

OBEDIENT TO THE expressed wish of a very large majority of the members of the National Brick Manufacturers' Association, for a meeting of the two national building brick associations during a given week and in the same city, it has been decided to hold the thirty-seventh an-



The Winton Hotel, Cleveland.

nual meeting of the N. B. M. A. in the city of Cleveland, Ohio, the week of February 5th, 1923.

THE CONVENTION CITY. Cleveland is the very heart of the clay industries of the nation. The N. B. M. A. met there last in 1916 when a high record of attendance was registered, nearly a thousand being present. Since that time new hotels have been built, the city has grown immensely in every way, population, wealth and amusement features, making it one of the most attractive cities in the nation.

Clay and Machinery Plants In and Near Cleveland.

There is in the immediate vicinity a number of large clay-working establishments of all sorts which will be open to delegates and where up-to-date equipment may be inspected. But a few miles distant are the clay centers of Akron, New Castle and Youngstown and the homes of the leading clay machinery firms at Bucyrus, Canton, Columbus, Dayton, Galion, New London, Plymouth, Wellington, Wellsville and Willoughby, to which there will be pilgrimages by many of the delegates convention week.

From every viewpoint the selection of Cleveland is a happy

one and an old-time rousing big gathering is sure to assemble there convention week.

WINTON HOTEL HEADQUARTERS: The beautiful Winton Hotel will be headquarters for both conventions. It is most admirably adapted for the transaction of the business and social functions of the two associations. Never have we enjoyed more sumptuous accommodations and facilities at any of the annual meetings. The convention halls and display rooms are unsurpassed and the entire equipment and service is of the highest class. Every guest room in the Winton has a bath and the rates are reasonable, from \$3.00 to \$5.00 for single and \$5.00 to \$7.00 for double rooms. Where extra guests occupy rooms with their friends, the added charge will be \$2.00 per person. There is a fine cafeteria or coffee shop that affords quick service for those desiring it, while the regular dining room service is first class in every respect.

Reduced Railroad Rates.

Have been granted by the Central Passenger Association and concurred in by the Trunk Line Association, the South-eastern Passenger Association, Trans-Continental Passenger Association, Western Passenger Association, and Canadian Passenger Association (Eastern Lines). Presume other associations will follow suit, making the reduced rate available from all points in the country provided there are two hundred



Main Lobby Hotel Winton.

and fifty certificates. These will be in evidence all right if each delegate will take a certificate for each fare paid going. Of late years, the trouble has been so many of our members have failed to take certificates. This we trust will not be true at the coming convention. Instead, we hope **EVERY MEMBER** will take a certificate whether he expects to use it or not. The certificate costs nothing. If used it saves one-half the fare paid going. That is, one-half of the return fare. So for the benefit of the other members, if not for yourself, be sure and ask for and insist on having a certificate for each fare paid going. It might be well to ask your local ticket agent a few days in advance, so in case he should not have the certificate blanks he can obtain same in time for your use.

The Second Floor for the Trade Missionaries.

One entire floor has been reserved for the trade missionaries, the machinery and supply dealers, and specific reservations will be made and observed. All sessions and functions will be held at the Winton. Early reservations are requested. The Union Station cars pass the door of the hotel.

THE CONVENTION PROGRAM: While there will be no intermingling of convention sessions, we are all to meet together as one happy family. The Common Brick Manufac-

urers' Association, will hold their sessions, Monday, Tuesday and Wednesday. The N. B. M. A. sessions will follow, beginning with the Smokerette, rechristened a Dinner Dance, Wednesday evening and the regular session occupying the balance of the week. The annual banquet will occur Thursday night.

An excellent program is in course of preparation, which, with further particulars relative to reduced railroad rates, etc., will be given subsequently. Those desiring further information relative to the meeting, the requisites of membership, or other details are requested to address the secretary at Indianapolis.

THE EXECUTIVE COMMITTEE,

T. E. WILSON, President.

THEO. A. RANDALL, Secretary.

CONVENTION DATES.

January 24, 25, 26, 1923—Canadian National Clay Products Association and Western Ontario Clayworkers' Association, Hotel Connaught, Hamilton, Ont., Can. Secretary Gordon Keith, 51 Wellington Street West, Toronto, Ont., Canada.

February 5, 6, 7, 1923—Common Brick Manufacturers' Association, Hotel Winton, Cleveland, Ohio. Secretary, Ralph P. Stoddard, Discount Bldg., Cleveland, Ohio.

February 7, 8, 9, 1923—National Brick Manufacturers' Association, Hotel Winton, Cleveland, Ohio. Secretary, T. A. Randall, 211 Hudson Street, Indianapolis, Ind.

February 12 to 17, 1923—American Ceramic Society, William Penn Hotel, Pittsburgh, Pa. Secretary, Ross C. Purdy, Lord Hall, O. S. U., Columbus, Ohio.

Announcement has not been made of convention dates for the Kentucky Clay Products Association, Wisconsin Clay Products Association, or Illinois Clay Products Association.

BRICK MAN ADDRESSES KIWANIS CLUB.

THAT THE CLAY products industry is destined to rank among the leaders of industrial alliance was the prediction voiced by F. A. Hoiles, head of the Alliance Brick Company, in an address before the Alliance Kiwanis Club Friday noon.

At the outset of his address Mr. Hoiles told fellow Kiwanians that it was the twenty-eighth anniversary of his connection with The Alliance Review. He picked out three faces among the group who were in business at the time he started at The Review.

He traced the origin and growth of the clay products industry from the days before the coming of Christ and sketched the modern day methods of brick manufacture. Mr. Ross Rue was credited by Mr. Hoiles with having introduced and fostered the clay products manufacturing industry in Alliance. Rue started the two brick plants in Alliance and scattered a dozen or more other plants over the state.

Ohio stands first among forty-eight states in the manufacture of clay products, the speaker said. Approximately 22 per cent of all clay products made in America come from this state. Eastern Ohio is rich in materials from which clay products are made, Mr. Hoiles said.

In closing Mr. Hoiles invited the Kiwanis Club as a body or as individuals to visit the company's plants and glimpse methods of brickmaking from the shale pits to the loaded car.

AN INTERVIEW AS AN INVESTMENT.

THE LANCASTER (Pa.) IRON WORKS issues a little folder pamphlet which contains some splendid arguments on how an interview with their experts by a brick manufacturer may prove a good investment by leading to plant improvement which will make for more economy and better products.

WEDDING OF THE DAUGHTER OF THE N. B. M. A.

MRS. EDNA RANDALL GOULD, the official daughter of the N. B. M. A., so elected many years ago by vote of the Association, and who is well known and loved by the entire membership, having attended all conventions for more than a quarter of a century, was married December 9th, to Mr. J. T. Liddle, of the Salmen Brick and Lumber Co. of New Orleans. After a brief sojourn at Gulfport, Miss., the happy couple will be at home at New Orleans, which will be their permanent residence. Mrs. Liddle is the daughter of Mr. and Mrs. Theo. A. Randall, and Mr. Liddle is the nephew of Mr. and Mrs. Fritz Salmen of Slidell, La. If good wishes count, Mr. and Mrs. Liddle ought to be the happiest couple in the world, for practically every brick and tile maker in the land and their families unite in congratulations and best wishes.

FACE-BRICK DEALERS

AS IN FORMER YEARS, the Face Brick Dealers met at West Baden, Ind., with the American Face Brick Association, and had a very busy and happy time buttonholing the manufacturers and renewing old and making new connections for the coming season. They add much activity in the lobbies and side entertainments, their middle name being "jollity," perhaps because of their aptitude in "jollyng" both buyer and seller, working both ends to the middle, so to speak, and in so doing rendering a very valuable service to the trade.

The election of officers for the ensuing year resulted as follows: President, Burt T. Wheeler, Chicago; Vice-President, R. N. LaBar, Scranton, Pa.; Directors, John Stone, Cincinnati; J. A. Dolbin, Boston; R. L. Findlay, New York; John Baker, Omaha; Ralph Spencer, Detroit.

OBITUARY.

PASSING OF DR. A. L. CONVERSE.

IT IS WITH real sorrow we chronicle the death of Dr. A. L. Converse, of Springfield, Ill., which occurred Saturday, December 9, following an illness of six months. He was born at Painesville, O., in 1842, but moved with his parents to Springfield, Ill., when but four years old, and spent most of his life in or near that city.

He was one of the organizers many years ago of the Springfield Paving Brick Company, of which he was President until he retired from active business to enjoy the well deserved rest to which he considered he was entitled in his declining years. He practiced medicine in his early years, but gave it up when his health broke down under the hardships of a country practice. He was prominent in the business, social, civic and political affairs of Springfield, being at the head of a number of benevolent organizations, and had served two terms in the State Legislature.

For a number of years he was the life of the Illinois Clayworkers' Association, serving as president of the association and as toastmaster at many of the annual meetings. He was gifted as a speaker, and his ready wit and kindly nature endeared him to those with whom he was associated. His wife died in June, 1921, after a married life of over half a century. He is survived by a son and two daughters.

NEW PLYMOUTH GASOLINE LOCOMOTIVE.

IN THE NEW 7-ton, 4-speed, Gear Drive Gasoline Locomotive announced by The Fate-Root-Heath Co., Plymouth, Ohio, the manufacturers claim that in actual haulage test it developed and maintained a drawbar pull of 5,250 lbs. on sanded rail. The four speeds are $2\frac{1}{2}$, 4, 8 and 12 miles per hour, either forward or reverse.

Plymouth 7-Ton, 4-Speed.

Gear Drive Gasoline Locomotive—This remarkable showing is claimed to be due to the unique design and construction of the transmission. The gears are unusually large and massive, an exclusive feature being an additional driving gear, $14\frac{1}{2}$ -inch diameter by 4-inch face. This gear permits of the proper speed reduction, and also places the sprocket shaft which it drives on the same plane with the axles, so that no jackshaft is required. The other gears are 2-inch and $2\frac{1}{4}$ -inch face, of large diameter.

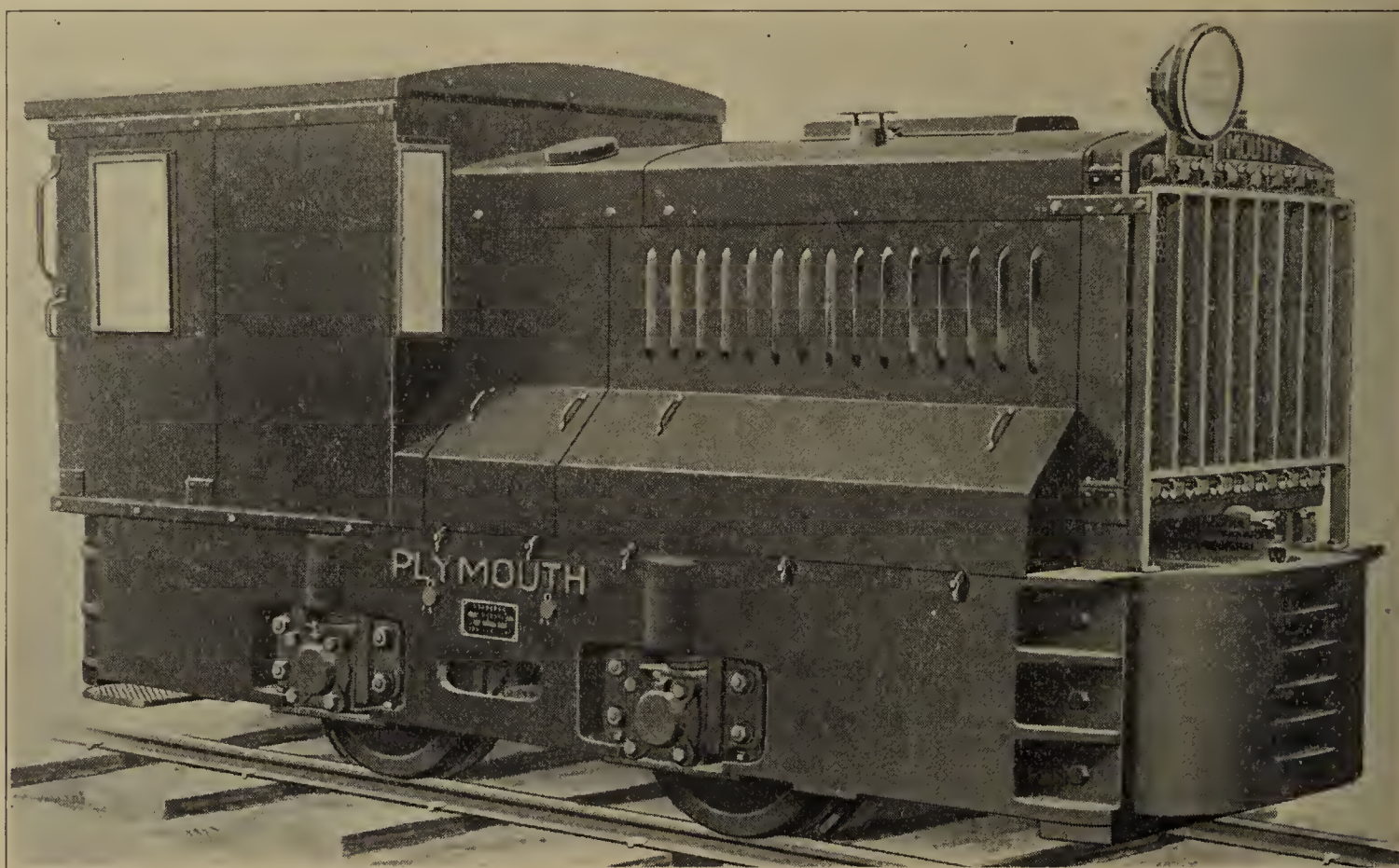
Magneto, Bosch Starter and Lighting; Pierce Governor and Stromberg Carburetor. Radiator is Modine sectional core type, cooled by 24-inch fan and protected by heavy steel guard.

Clutch is dry plate type, nine driving discs faced on each side with non-burnable facings. Does not require oiling, and very smooth in action.

Axles are mounted on Hyatt Heavy Duty Roller Bearings, with hardened steel sleeves to take the wear. Axle end thrust is taken by Bronze Thrust Plates placed in the axle boxing caps, which provide perfect lubrication. Axle Springs are $12\frac{3}{4}$ -inch long, so that wheels readily follow uneven track, make easy riding, and give excellent traction.

Completely Assembled Transmission and Clutch—Brakes are placed between the wheels. Brake Shoe covers both tread and flange of wheel. Lever type of Brake Rigging is used, producing the same pressure on all four wheels, regardless of wear on wheels or shoes.

Sand Boxes are located high behind engine which keeps sand warm and dry. Sand Pipes hug the rails, placing sand



New Plymouth Seven-Ton Four-Speed Gear Drive Gasoline Locomotive

The sliding gears are made in pairs on the second driving shaft, giving extra long hub length, and reducing wear to a minimum. The gears that are driving are the only ones that are in mesh. Forward and reverse speeds are obtained by large bevel gears with internal gear teeth into which the pinion that drives the main gear meshes, thus doing away with jaw clutches.

Partially Assembled Transmission.

Showing Reversing Gearing and 4-Inchx $14\frac{1}{2}$ -Inch Final Driving Gear—All gears are of alloy hardened steel, mounted on extra large shafting and ball bearings. Bearings are all inside gear case, from which they receive their lubrication, requiring no special attention, and insuring permanent alignment at all times.

The final drive is by means of two short heavy chains, one to each axle, driven direct from the transmission.

Built Up Transmission.

With Cover Removed—Power plant is Buda Heavy Duty Engine, 4-cylinder, $5 \times 6\frac{1}{2}$, equipped with Bosch High Tension

directly on rails. Valve does not slide on its seat, preventing wear. Sand is agitated when valve is opened, insuring positive flow.

The Frame is of massive construction and built close to the track. Bumpers are arched so as not to derail cars in rounding sharp curves. The Cab and Canopy are of all-steel construction, easily disassembled. Cab has side as well as rear entrance, affording greater safety, and provided with wired glass windows.

EIGHT BIG BRICK PLANTS INCLUDED IN \$10,000,000 CORPORATION.

The Central Refractory Company of Ohio and the Refractory Company of Pennsylvania, manufacturers of brick and tiling, have been merged under the laws of Pennsylvania into a \$10,000,000 corporation. C. B. Young of Columbus was elected president; Irves Harvey, Bellefonte, Pa., secretary.

and W. W. Connell, Newark, treasurer. The organization includes eight of the largest plants of their kind in the country.

DETROIT BRICK NEWS.



NOVEMBER ADDED another heavy month to the year's building totals, showing 2,203 permits to cost \$7,734,527, of which 1,803 permits were for new work to cost \$7,082,695 and 400 for alterations and additions to cost \$651,000. This compares with 1,112 permits to cost \$4,041,510 in November, 1921, and is an increase of 1,091 permits and \$3,693,017 in cost.

With the additions for December it is expected that Detroit

to provide for 753 families and cost \$1,864,934. Sixteen structures to provide 33 stores and 32 apartments will cost \$214,289.

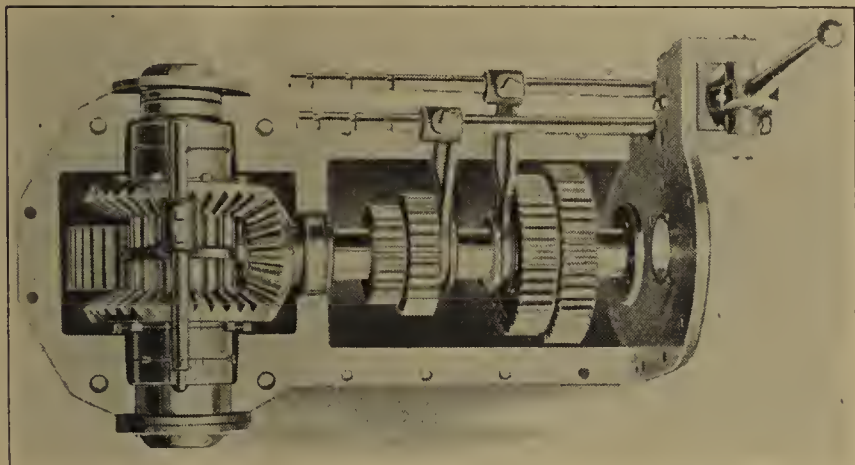
As to the character of construction, 1,507 frame structures are listed at a cost of \$2,483,122; 165 brick veneer, \$1,264,750; 110 brick and tile, \$3,030,343; 18 cement block, \$28,680, and two reinforced concrete, \$273,800.

Reports from the offices of the architects indicate that the new year will start with a large volume of work and that 1923 should, if anything, distance the showing made this year, which will break all previous records.

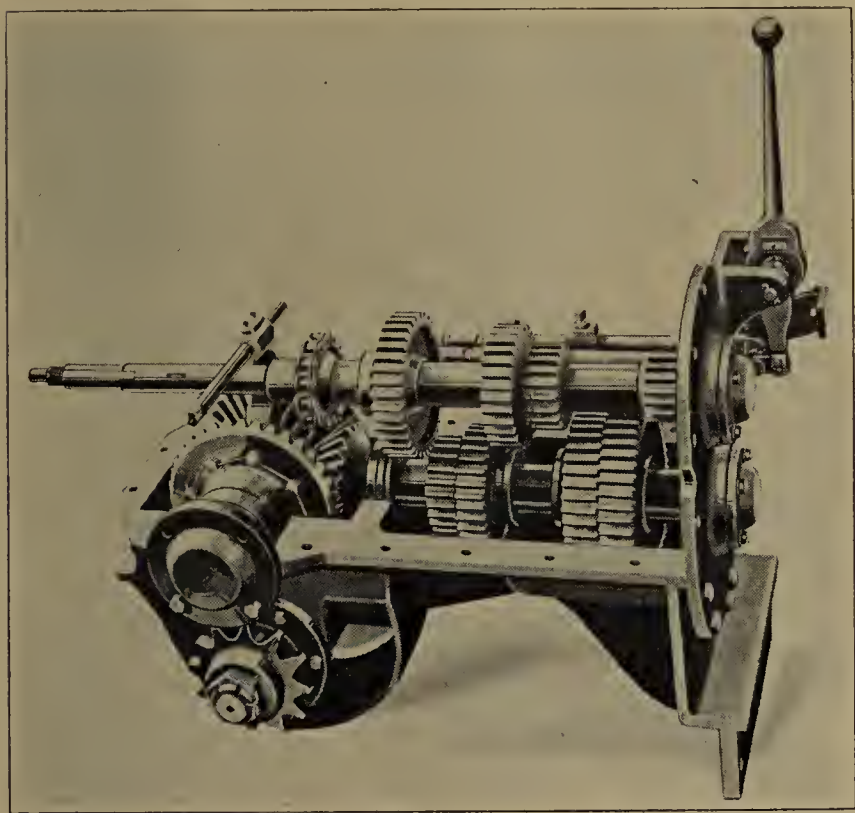
It is pointed out that there has been only a comparatively small amount of heavy reinforced concrete construction of an industrial nature and that the Detroit manufacturing plants are rapidly reaching their capacity. This will mean extensions and they are expected to go ahead during next year.

With an increasing labor and material cost some of the local contractors are going slow in taking on new work and are accepting just enough to keep them reasonably busy.

They are waiting to see what the new year will bring and do not intend to sharpen their pencils just now and get overloaded with work when they are not reasonably certain as to what the future labor and material condition will be.



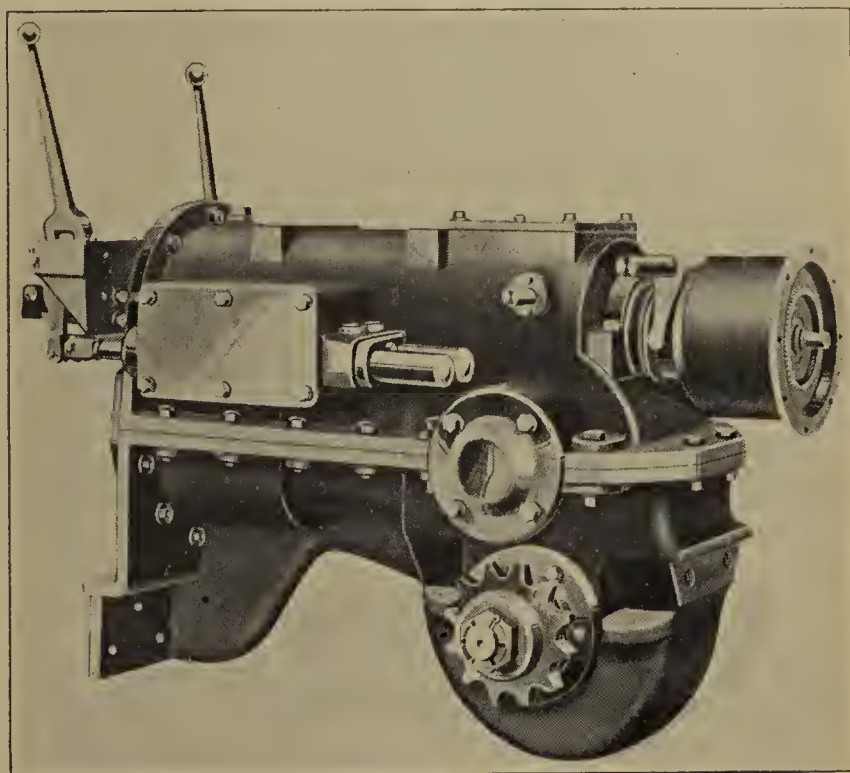
Partially Assembled Transmission, Showing Reversing Gearing and Exclusive Feature of Massive Final Driving Gear, 4-in.x14½-in.



Built Up Transmission, With Cover Removed

will show a figure for 1922 above \$90,000,000, as there is one project alone, consisting of a hotel and three theatres, which will run \$12,000,000. It is expected that work will start in this job by the first of the year and if the permit is applied for in December it will send the total for the year over the 100-million mark, which is the goal local statisticians are looking for.

In the November list there were 601 single residences, to cost \$2,187,200, 157 two-flats to cost \$1,194,350, 40 apartments



Completely Assembled Transmission and Clutch.

Plastering contractors are up against it hard, for there are not enough plasterers to go around and they are able to do about as they please. As a consequence, good men can almost name their own wages and get them, too, without any trouble.

With the transportation troubles which have affected the whole country, Detroit contractors have also had their troubles. They have been held up frequently on account of the slow freight movement and they are not finding conditions much improved, they state.

While contractors in various parts of the country are raising a cry because they are expected to take stock, bonds, notes, first, second and third mortgages in payment for their work, Detroit contractors are up against a peculiar proposition but which is probably not confined to Detroit by any means.

Many of the large apartments are being built through bond issues or mortgages. The contractor who figures the job and finds he is low, is asked to take part of his pay in bonds, stock or some other kind of paper. Usually he is not able to wait for a large part of his contract price, and so declines the job.

Then the next lowest man is tackled, until the owner or promoter finds one who is willing to take the chance.

The Builders and Traders Exchange is adding to its membership steadily and at a recent meeting of the Ex-Directors' Club the proposition of putting up a building for the exclusive use of the Exchange was discussed. This is not a new proposition and has been considered before. The Exchange now occupies the entire fourth floor of the Penobscot building and is paying \$17,500 rent per year. It has about four more years to run, when its lease there will expire. Some of the members believe that it would prove a paying proposition to either buy or build a structure which would house the Exchange, with its building exhibits and offices for its various members, as well as provide meeting rooms, figuring rooms and all of those things which are necessary to a modern Builders Exchange.

With the high cost of Detroit real estate at the present time, it is pointed out that it would be necessary to move the Exchange quarters out some distance, and as much of the business of the city is now moving away from the center of Detroit, that would not be much of an obstacle.

Many of the architects have moved their offices out some distance, so that contractors and clients will have some chance to park their cars when they call on business. It takes a man longer now to find a place to park his car in the center of the city than it does to transact his business after he finds the parking space, and this fact has caused many of the professional offices to move farther out.

A novel project in the form of a 57-story tower building is in the air for Washington boulevard and if it happens it will cast a shadow on the famous new 80-foot Woolworth building. Plans have been drawn, but the details are not completed.

The employment situation in this city is holding up well, but it is expected that there will be some falling off as the holidays approach as many of the large manufacturing plants have the habit of closing for inventory about this time of the year. However, that will only be temporary, as the volume of business on their books is such that the opening of the new year will see them going ahead at a record-breaking pace.

NORTON.

BRANDS IN THE REFRACTORIES INDUSTRY.

AMONG THE PUBLICATIONS the past month is the 4th edition of a pamphlet gotten out by the Refractories Manufacturers' Association giving a list of the brands used by practically all the manufacturers of refractory brick. This little booklet is especially useful as a reference work as it enables one to find at a glance who it is that makes any particular brand of refractory material. A copy will be sent to those interested on request to the Manufacturers' Association, Oliver, Bldg., Pittsburgh, Pa.

NEW MANAGER FOR FIRE BRICK COMPANY.

The Chicago Fire Brick Company announces the appointment of Mr. F. R. Minton as manager of their fire brick department. Mr. Minton is well known in the fire brick field, as well as to most of the large users of fire brick throughout the country. Long experience in this line, coupled with a thorough knowledge of modern manufacture and practical application of refractory materials, makes Mr. Minton an important addition to the Chicago Fire Brick organization.

POTTERY COMPANY TO BUILD HARROP KILN.

The A. E. Hill Pottery Company of Crooksville, O., recently closed a contract with the Harrop Car Tunnel Kiln for the firing of whiteware, stoneware and earthenware. Construction work will be started in January.

A REFRACTORY SURVEY.

SECRETARY FREDERICK W. DONAHOE of the Refractories Manufacturers' Association, Pittsburgh, has started something. The Something he has started is a survey inquiry about the use of refractory material in different industries, which should result in obtaining information that will be of great value to all manufacturers of refractory materials. Therefore it naturally follows that the movement and the efforts of the Committee on Industrial Survey which has this matter in charge should receive the hearty co-operation and support of every manufacturer.

Speaking of this new undertaking Secretary Donahoe says:

"Research in refractories—particularly in connection with the manufacture of refractory brick—has been largely confined to laboratory work. A movement has been started, however, which has for its purpose the uncovering of a mass of information with regard to the furnace conditions which confront this material in actual service. It takes the form of an industrial survey, which will be conducted by the Refractories Manufacturers Association in co-operation with communities which have already been appointed in associations of users of refractory brick and with individuals, firms and corporations to whom refractory brick is an industrial necessity.

"This survey will consume the better part of two years and it is hoped that preliminary reports will be made at the end of the first three months, the first half year and so on, until the survey is completed. These reports will cover the information which will be gathered by using a rather elaborate questionnaire; this questionnaire will be distributed to consumers of refractory brick in the thirteen industries to which the bulk of this material goes. These include blast furnaces, stoves and connections; open-hearth furnaces and metal mixers; heating, puddling and forge furnaces; cupolas, malleable furnaces, oil refineries, gas plants, glass houses, by-product coke ovens, zinc, copper and lead refineries, boilers, cement, lime and plaster kilns and kilns for burning ceramic products.

"The questionnaire covers temperature and combustion conditions found in the typical furnace, abrasion, slag action, the pressure or absence of uncommon furnace gases, spalling conditions, loads, insulation, character of draft, etc. This information will be sought in a large number of industries and the answers to the questionnaires will be sent to the Mellon Institute of Industrial Research, at Pittsburgh."

Among the specific things that this questionnaire survey is expected to develop is general information about types of furnaces, specific information about temperature and combustion, other information about abrasion, slag action, action of gases, spalling, load conditions and so on. They will also keep an eye out for any specific points or matters not covered by the 25 points set forth in the survey questionnaire itself.

As the survey progresses far enough to justify, special reports will be made to the members of data relative to conditions in the industry or industries reported upon among the users of refractory materials. It is known that conditions among the users have been changing considerably and these changes make a call for brick of entirely different characteristics and it is thought this movement will help co-ordinate the changes in requirements with changes in the refractory materials themselves.

It is felt, and properly so too, that both producers and consumers of refractory material will derive great benefit from the successful carrying out of this survey work. So the movement is of specific and direct interest not only to manufacturers of refractories but also to the users.



THESE COLUMNS ARE OPEN TO ALL. THE FULL NAME AND ADDRESS IS REQUIRED, BUT WILL NOT BE PUBLISHED EXCEPT WHEN PERMISSION IS GIVEN. THOSE DESIRING TO COMMUNICATE PRIVATELY WITH ANY CORRESPONDENT WHOSE FULL NAME IS NOT GIVEN CAN DO SO BY ADDRESSING LETTERS CARE OF CLAY-WORKER.

A Very Needful Thing.

Editor The Clay-Worker:

Please send me a copy of your journal The Clay-Worker. I am now figuring on going into the brick business, and if I do will of course want to read The Clay-Worker.

Oakdale, Tenn.

A. E. VENABLE.

Oldest Plant in Philadelphia Changes Hands.

My Dear Randall:

I have retired from the brick business, having leased my plant at 30th and Tasker Streets to R. M. Webb, and expect to be far away from Philadelphia permanently. My plant was the oldest in Philadelphia, having been started by my grandfather in 1835, was continued by his son Edmund Webster, and then I took charge in 1908, still retaining the old firm name.

A. D. KEYSER.

The Clay-Worker a Valuable Adjunct to Business.

Editor The Clay-Worker:

Please find enclosed a check in payment of our subscription to The Clay-Worker. We do not want to miss any copies.

The brick business here in Oklahoma City is holding up very well. We have orders on hand at present for over 1,000,000 brick, and are putting in machinery which will double our capacity. We always look forward with pleasure to the coming of The Clay-Worker and consider it a valuable adjunct to our business.

Yours very truly,

KENYON BRICK & TILE CO.

Kaolin Deposit in Texas.

Editor The Clay-Worker:

It may possibly be of interest to you and some of your many subscribers to know that I have recently discovered on my land in Kent County, Texas, large deposits of kaolin, easily mined and accessible to the railroad. I am accordingly enclosing chemical analysis of same.

Moisture28.80%
Analysis of moisture free material.

Silica (SiO₂)61.21%
Aluminum Oxide (Al₂O₃)22.61%
Iron Oxide (Fe₂O₃) 2.23%
Calcium Oxide (CaO) 1.97%

Will be glad to furnish any further information to any one desiring same.

Alexandria, a.

C. A. HUDSON.

A Word of Appreciation.

Editor The Clay-Worker:

I am enclosing check to renew my subscription to The Clay-Worker for another year. I have a fair idea of the immense amount of labor it takes to arrange and gather information

such as is contained in a copy of The Clay-Worker, and I have no words to express its value and usefulness to me. I certainly compliment you on your publication.

Yours truly,

Albion, Ind.

FRED LANDGRAFF,
Albion Tile Factory.

Diatomaceous Earth.

Editor Clay-Worker:

May we call your attention to the frequent use in articles in technical journals, of the trade names "Sil-O-Cel," "Celite," "Filter-Cel," "Nonpareil," etc., all of which refer to the material known to commerce as diatomaceous earth?

We are producers of diatomaceous earth, and are marketing it under the name of "Feather-Stone." In fairness to all interested in the production of this valuable material, we believe it should be referred to in journal articles under its proper name—"Diatomaceous Earth."

Diatomaceous earth has also been known under the names of "Infusorial Earth" and "Kieselguhr." We believe that "Diatomaceous Earth" is the most desirable usage, the material being composed of skeletons of diatoms. The use of the term "Infusorial Earth" in this connection, is incorrect, since the skeleton remains of Infusoria are either absent entirely, or present in an inconsiderable quantity. The name "Kieselguhr" is of German origin, and is not descriptive of the material.

Thanking you for the attention, and wishing The Clay-Worker the success it so greatly deserves, we remain,

Very truly yours,

FEATHER-STONE INSULATION CO.

Norris Goodwin,
Chem. Engineer.

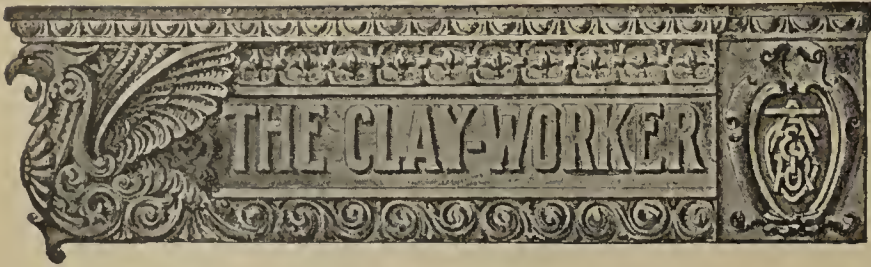
How to Get Rid of Soot.

QUESTION: Will you kindly advise me in detail, how they dry out brick in a rectangular, up-draft kiln, furnaces built for coal on outside of kiln walls. After using fifty tons of gas coke, my kilns sometimes choke up with soot. I am using Western Kentucky coal.

Answer: Many factories have some trouble in water-smoking bricks in up-draft kilns in consequence of sooting and thus choking the draft, especially where the work is carried out with bituminous coal. In the past we know a number of yards that kept cast iron guns to shoot the soot. The gun was loaded to the limit, stuck into the kiln and fired. The explosions loosen the soot and it was carried out of the kiln by the draft. Coke if burned to give a clear hot fire will water-smoke without sooting and the way to get such a hot fire is to loosely lay up a box of bricks on the furnace grate bars and after getting the coke nicely under fire the box should be kept full of coke to get the deep fuel bed required for this fuel. Fifty tons of coke should be almost enough fuel to complete a burn of 200,000 bricks and it is almost inconceivable that after using such an amount of coke, the kiln should soot when put on soft coal. Unless the kilns are very large, or there is something abnormally wrong, the bricks should have a good red heat by the time fifty tons of coke have been used.

It may be that the kiln bottoms are wet and constantly drawing more water; that the bricks are not properly dried before being placed in the kiln unless the product is dry pressed; that the setting may be too close not only in the arches but throughout the kiln; that the platting which should be double with the under course spaced and the upper course tight, is not sufficiently opened for the watersmoking. Every other brick in the top platting should be taken out for the watersmoking and replaced for the burning.

CAREY P. ELLIS.



Entered at the Indianapolis postoffice as second-class matter.

A Practical Illustrated Monthly Magazine, devoted to Brickmaking and allied Clayworking Arts and Industries.

THIRTY-NINTH YEAR OF PUBLICATION.

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OFFICIAL ORGAN OF THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA.

TERMS OF SUBSCRIPTION:

One copy, one year (in advance)	\$ 2.00
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Six copies, " " " " " "	10.00
Ten copies, " " " " " "	15.00

Foreign subscriptions 65 cents additional.

Subscribers when ordering a change of address should give both the old and new address.

ADVERTISING RATES

Furnished on application. The CLAY-WORKER is unquestionably the most effective medium in its field, and character and circulation considered it is the cheapest. To insure insertion in current issue, advertising matter should be sent to office of publication on, or before the first of the month.

Correspondence on all subjects of interest to Clayworkers solicited. All communications should be addressed to
211 Hudson St. T. A. RANDALL & CO. [Inc.], Indianapolis

Vol. 78. December, 1922. No. 6

CURRENT COMMENT.

Now for the annual inventory.

* * *

The balance ought to show up better this year than usual.

* * *

May your Christmas be merry and your new year happy and prosperous.

* * *

Coal is now softer in price and the fuel bill ought to be a little lighter during the latter half of the winter.

* * *

It will not hurt to also put a thrift clause in your new year resolutions and put this clause in action and keep it working during the year.

* * *

Let us not overlook the fact that there is a big future field for sewer pipe development especially in the smaller cities and towns and in the agricultural districts.

* * *

The easier financial conditions among the farmers and the knowledge that farm drainage is a good investment should make for a good winter and spring business in farm drain tile.

* * *

In making your new year resolutions write at the head of the list your determination to be active among those present at the N. B. M. A. annual at Cleveland the week of February 5th.

* * *

There does not seem to be any room for argument on the point of whether or not it is advisable for brick manufacturers to follow uniform methods in cost accounting. The face brick

people through their association are setting a splendid example in this work which should be followed by the whole industry.

* * *

One only needs to take a glance at the records to see that the hollow building tile industry is making good progress and is headed for even bigger and better doings.

* * *

An unsheltered brick kiln is not only a bad object lesson but it is a poor business policy. Those big rectangular kilns should be shedded over for protection against the weather.

* * *

Those men who got ready and started out producing early last spring are the ones who profited during the year. There is more than a hint in this to be prepared early in the season next year.

* * *

From what we can judge from tuning in on the broadcasting of the sentiment throughout the country there will be the biggest attendance on record at the annual gathering at Cleveland.

* * *

Another doctor has got into the limelight by the declaration that there are ten million feeble minded people in the United States. Sometimes when a lot of people won't agree with us we are ready to agree with this doctor.

* * *

There is no question that brick and hollow building tile have arrived and that they are to be the dominant building material of the future. The questions are simply those of how to carry on the good work of promoting their use most successfully.

* * *

If you don't get more out of your inventory than just a set of figures and a balance you will be missing some opportunities. Inventory time furnishes a lot of good opportunities to get a specific line on costs and turnover and details which should prove of value during the coming year.

* * *

One point you should always keep in mind in seeking for machinery equipment is to find in the machinery offerings that which fits in best with the nature and the quantity of the work you have to do. For it is adaptability as well as inherent merit in a machine that counts in real efficiency.

RAW MATERIAL HANDLING.

A careful checkup among various industries has brought a surprising realization that raw material handling seems to cost more than it should in comparison with the progress that has been made in manufacturing itself. This is illustrated in the lumber industry by the fact that logging operations represent 71.9 per cent of the total production labor figured in one man hours in hardwood from tree to pile. Thus broadly speaking we may say that more than two-thirds of the manufacturing cost is cost pertaining to the garnering and handling of raw material.

It might furnish us some light to go into a thoughtful analysis of this kind in the clayworking industry. We have a different problem here of course from sawmilling for we have really three divisions. There is the garnering and handling of raw material, the manufacturing, then the burning, after which comes the handling of the finished products.

The burning is the big item of cost in clayworking, but the more we can reduce manufacturing cost and raw material handling cost the better are the chances to get profit out of the industry and yet keep the price of the finished product down to a reasonable basis.

We have made good progress both in manufacturing equip-

ment and in special equipment for garnering and handling raw material, but we should not stop at that or be satisfied with it. It is a good time to look into this matter of the cost of garnering and handling the raw material, and then investigate new ideas and offerings in equipment with a view to finding ways and means to reduce the raw material handling cost.

TRADE CONDITIONS.

There has perhaps never been a time in the history of the clayworking industry when we have had as much demand for material as we have this winter. There is a determined effort to continue with building operations right through the winter wherever this is practical, and the result is an unusual volume of winter demand for all the clay products entering into building construction.

This does not mean that every brick manufacturer has more business than he can take care of. There are many brick plants serving local communities where building operations as well as brick making go into winter quarters and nothing much will be doing until next spring. Even these, however, have had a good run up to cold weather and will probably find their stocks cleaned out by spring.

Those plants serving the big centers of building operations find the demand is keeping up unusually well through the winter months, and at this writing it looks like we will have the busiest winter in the history of the clayworking industry, and that when the busy spring season opens the volume of demand will increase materially and everybody will be kept hustling.

WORKING WITH THE DEALERS.

Practically all the structural lines in clay products are now recognizing the advantages of the dealer hook-up in communities where they need representation, and some good work is being done in developing dealer interest and co-operation. Perhaps the Hollow Building Tile Association has done some of the best work in this line and is still at it doing some things that should be an inspiring example to other clay products lines. For example, one of the duties of field men of the Hollow Tile Association is to call upon dealers and help get them interested in carrying and exploiting hollow tile, and to encourage this by an outline of the co-operation that the association will give dealers in the matter of advertising. This advertising service consists in furnishing copy, electrotypes, also the association is prepared to furnish literature for direct mail advertising. This is an active hook-up which helps awaken and keep alive the interest of the dealer. More of the same kind of thing by other lines of clay products will help put clay products on the map more conspicuously with the local retail dealer in building material, and this in turn will insure better recognition and wider use of these products in the future.

BRICK BURNING BY ELECTRICITY.

It is doubtful if we will ever enter extensively into the work of burning brick by electricity in this country, unless some remarkable changes in electric production come about, but it is interesting to learn that they are already experimenting with this in Norway. One reason for this of course is that water power for electrical purposes is plentiful in Norway while coal is perhaps expensive.

A commerce report tells us that near Sandes in Norway they have been experimenting with electric brick ovens of an American type which have proven successful in the burn-

ing of brick and that the control makes it easily practical to burn whatever shade is desired.

Figures compiled from these experiments indicate that in the manufacture of brick on large scale the average consumption of electrical power would be one kilowatt hour per brick.

As pointed out, one essential condition for the successful use of electricity in the burning of brick, pottery, lime and other products, is a plentiful supply of electrical energy at cheap rates. It is pointed out that in the territory where these experiments are carried on about ten million brick are manufactured annually, consequently the burning would call for ten million kilowatt-hours of electrical energy, which is about twice the amount consumed in that locality at present.

It is the erecting of new water power plants in Norway which will furnish surplus power that is leading to the experiments in the utilizing of this power for brick burning.

POWER POINTERS.

There are two interesting features which have come out of the recent power exposition at Grand Central Palace, N. Y. One is that power is a measure of civilization or progress, and the other is the widespread adoption of superheated steam in power plants. One of these problems, that of high pressure and superheated steam, which seem to go hand in hand, is a technical problem of greater efficiency and is a mark of mechanical progress. The other has a human hook-up as well as a mechanical meaning.

We may take it as an outstanding characteristic of this great country of ours that it is in making mechanical power do the work of man that we have attained our really great progress and industrial and financial supremacy. It may well be argued that not only in the country as a whole but in any given industry the measure of power used is the measure of progress in manufacturing methods, because the more power we use the greater is the volume of production from a given amount of energy by man himself.

In this respect the clayworking industry can take some pride in the progress that has been made in the past quarter of a century. In the pioneer days in this country, and for ages prior to that in older countries, very little mechanical power entered into clayworking, while today mechanical power is the big factor and is reaching out to clay pits and shale banks as well as carrying on the work of grinding, mixing, molding and handling of the clay products.

Taking power as a measure of progress and civilization, the clayworking industry has made some splendid progress during the past twenty-five years.

APPLYING S. AND E. TO HOLLOW BUILDING TILE.

The Hollow Building Tile Association, through its Standards Committee, has taken up actively the work of standardization and elimination so as to conform with suggestions of Secretary Hoover of the Department of Commerce for reducing economic waste by setting up a few simple standards in sizes and shapes and eliminating those that are useless and burdensome. Every manufacturer of hollow building tile is being asked to help in this by making out a report covering the different shapes and sizes made and the relative quantities of each which are sold. It is desired to urge here, too, that tile manufacturers give prompt response to inquiries of this kind, for it will mean better times and a better chance for profit in the hollow building tile industry if we can eliminate a lot of burdensome sizes and shapes. And that this can be done has been demonstrated in paving brick by reduc-

ing 66 sizes to 7. The doing of something of the same kind on the part of the hollow building tile industry will be a great step forward.

THE BOOK OF SMILES

The Christmas Book of Smiles is an exceptionally happy number. The opening epigram is timely:

"Do right and fear no man
Don't write and fear no woman."

This is followed by another equally pat statement:

"The country may be dry, but it isn't too dry for wild Oats."

Another clever skit is entitled, "That New Song," and reads:

"Kiss me by radio"
Gosh that is tough.
Lady, O Lady, O,
'Tain't close enough."

Right along in the same key might be sung another verse, though not in poetry:

"Call a girl a chicken and she cackles; call a woman a hen and she lays for you."

Speaking seriously, the Editor of Smiles says that the seller's interest should not end when he is paid, and it doesn't, as illustrated by a letter from the Boston Fire Brick Company to the Standard Dry Kiln Co., complimenting them for service in connection with their dryer in which they say:

" * * * "We are making the best sand struck brick ever made in New England (Mr. Wirsching will confirm this) and we are glad to say to you that the Standard System of Drying enables us to produce such brick where other methods would not." * * *

For further particulars in regard to the Standard Dryer, address The Standard Dry Kiln Co., 1547 McCarty Street, Indianapolis, Ind.

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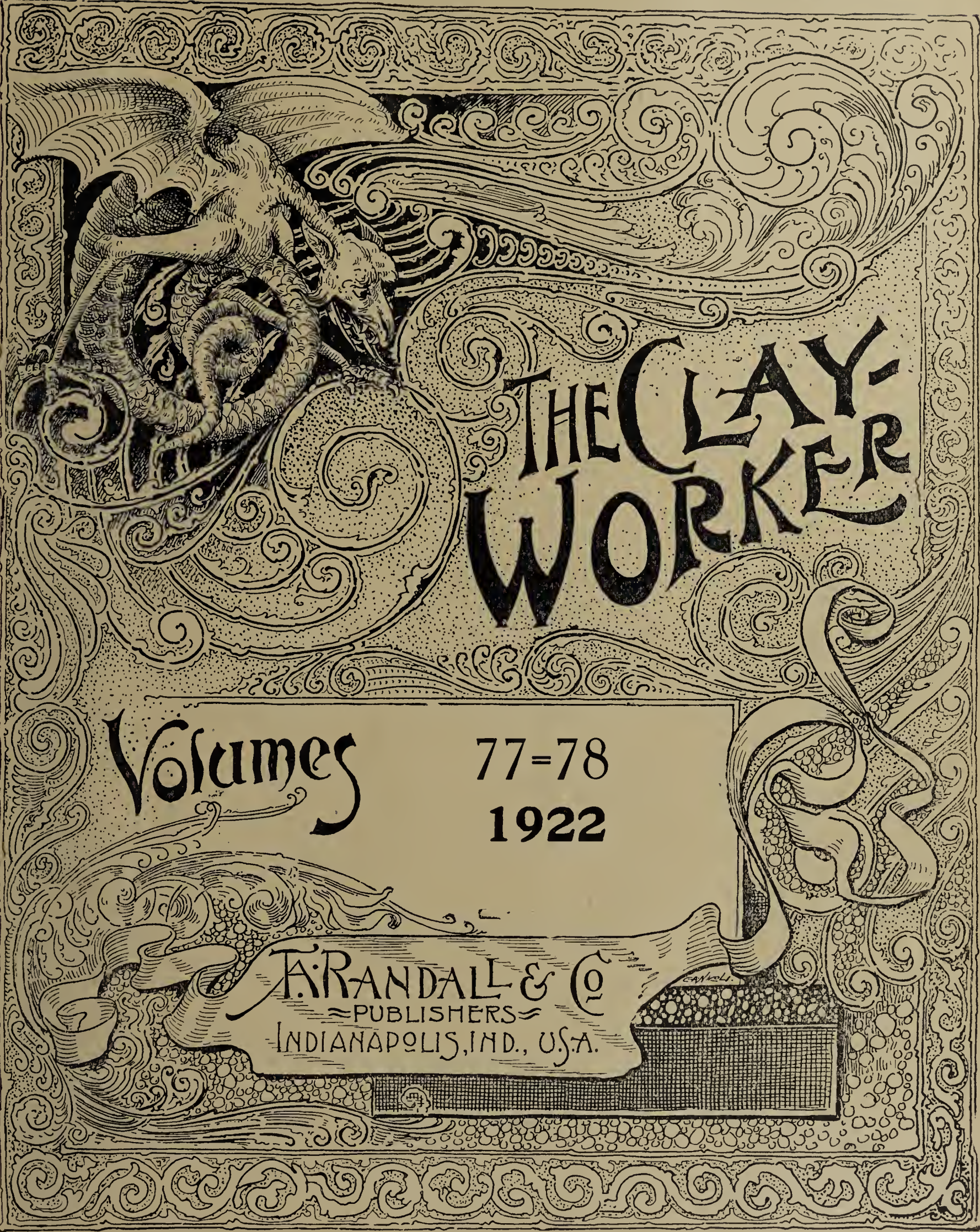
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Volumes

77-78
1922

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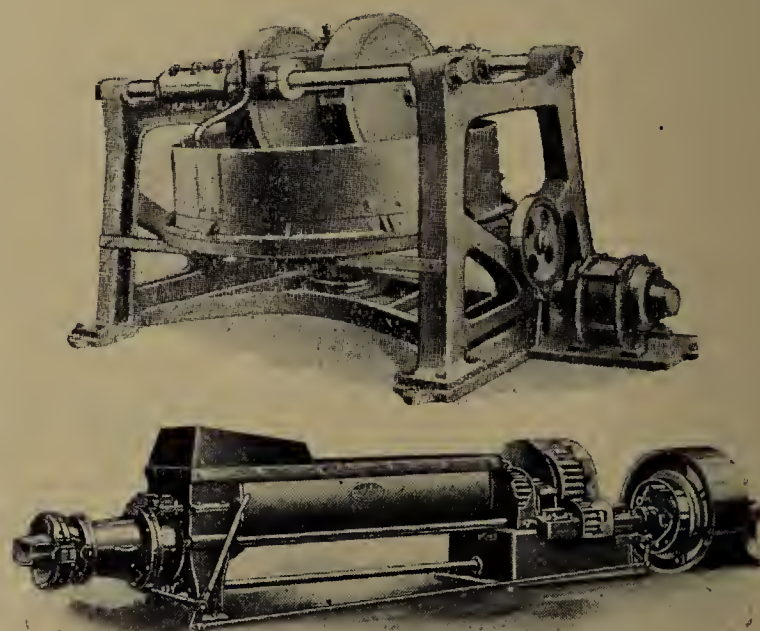
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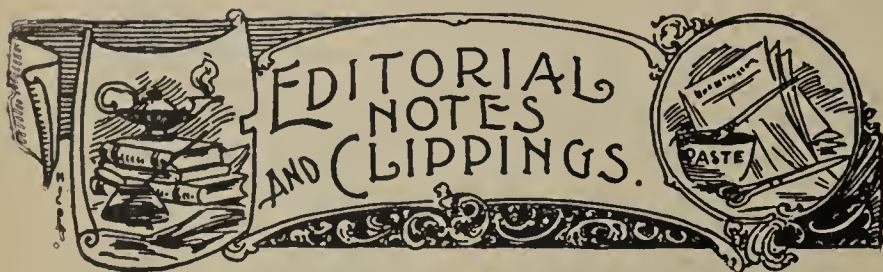
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The Hopewell China Corporation of Hopewell, Va., will construct two additional kilns at its plant.

The Mercier-Bryan-Larkins Brick Company, Detroit, Mich., has decreased its capital stock from \$60,000 to \$40,000.

The Hopewell China Corporation of Hopewell, Va., is planning to build two additional kilns at their plant in that city.

The Easton, Md., Brick and Tile Company has begun operations, the electrical machinery being capable of turning out 6,000 bricks an hour.

Fire destroyed a portion of the plant of the Colfax Pressed Brick Company, Clay street, Denver, Colo., with loss estimated at \$30,000. It is planned to rebuild.

Articles of incorporation have been issued to the Horton Pottery Company, Morton, with a capital of \$50,000 for a general manufacturing business. Incorporators are D. W. Rapp and J. E. Cerber.

General Refractories Company, Ableman, Wis., has been incorporated in Wisconsin, capital stock of \$120,000. A large tract of refractory clay and silica has been developed in deposits surrounding the village of Ableman. The incorporators are W. L. Spraul, B. E. Sloan and J. A. Spraul.

Charles Morris is making preparations to establish a brick plant at Holdenville, Okla.

W. C. Craig, of Brownsville, Tex., has announced that he will install a brick manufacturing plant at Robstown, Tex.

Bolger & Medley of Owensboro, Ky., are planning to establish a plant to manufacture face and rough cut brick and hollow tile.

Plant of the Stephen Brick Company, Ltd., Prince William street, St. John, N. B., was destroyed by fire with a loss of \$100,000 to building and equipment.

The capital stock of the Jova Brick Company, at Newburgh, N. Y., has been increased from \$56,000 to \$500,000, and extensive improvements will be made in the plant.

Corry Brick and Tile Company of Corry, Pa., has been awarded the contract for furnishing the face brick for the new Roosevelt school to be erected at Erie in the near future.

The Chehalis Brick and Tile Company will make extensive improvements at its plant at Chehalis, Wash., during the winter months. The company has eighteen acres of clay, which will provide raw material for a long time to come.

Gladding, McBean & Co. is erecting a large steel structure 80x90 feet on the west side of their main pottery building at Lincoln, Calif., to be used for clay storage. The building is conveniently located to receive the clay just as it comes from the pits.

William Lichte of Bland, Mo., has brought suit in the Circuit Court at Herman, Mo., to enjoin the Laclede-Christy Clay Products Company of St. Louis from taking possession of, hauling away and converting to its own use any

(Continued on page 598.)

PROTECT COSTLY KILNS—



TECKTONIUS
Kiln Band Fastener

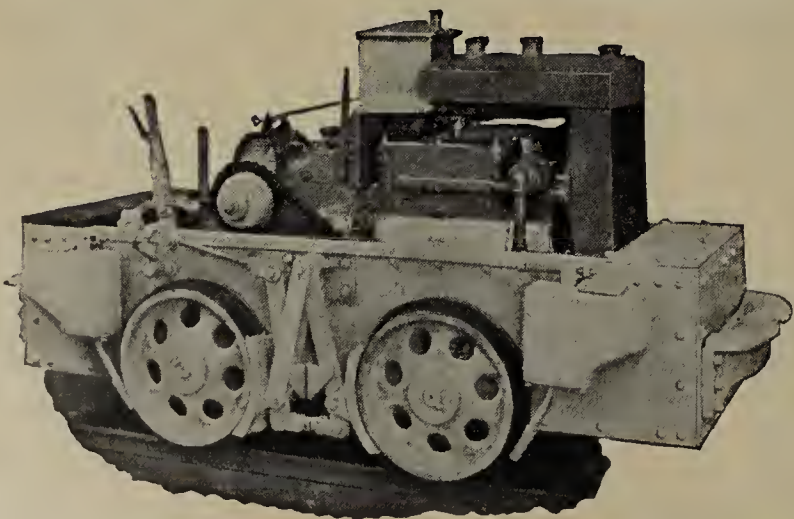
—with the world's best band fastener, the famous wedge-action Tecktonius Lug. Read What Users Say: * * * "We could not be induced to use any other" * * * "We are through experimenting, we are using Tecktonius" * * * "Most satisfactory lug on the market" * * * Have used your lugs for thirty years—no expense for repairs" * * * We are using 476 of your lugs and are placing an order for 100 more".

Add years to the life of your costly kilns. Make your bands effective. Send for our catalog and price list—today.

E. C. Tecktonius Mfg. Co.

Racine Junction, Wis., U.S.A.

AN ATLAS Gasoline Locomotive for \$1400.



Having Drawbar pull of 1500 lbs.

This is a sturdy, substantial, effective Locomotive that will stand up to its job and perform.

"You can't Afford to be without it."

Put your Haulage Problem up to us.

Manufactured by

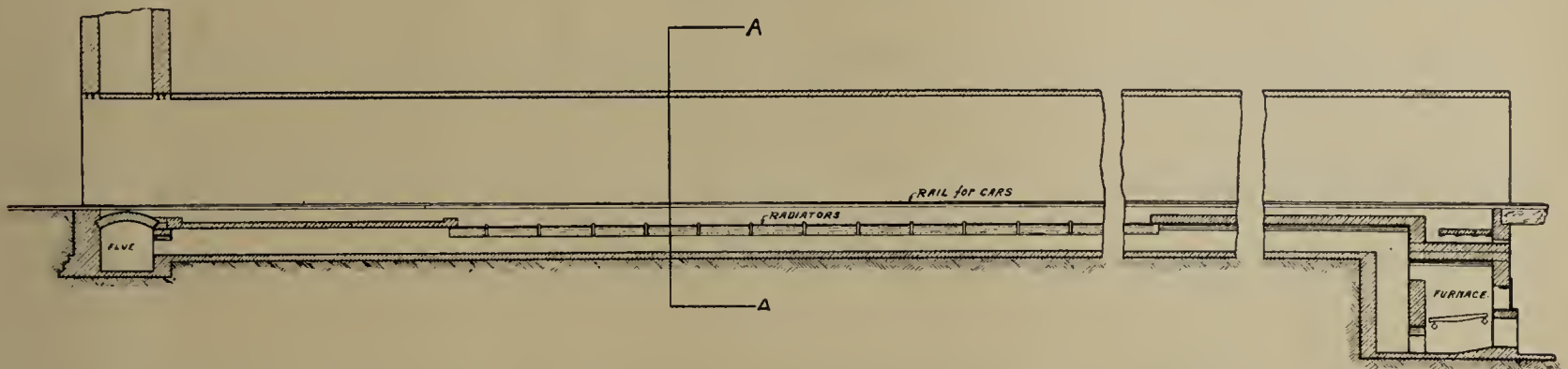
THE ATLAS CAR & MFG. CO.

ENGINEERS

MANUFACTURERS

CLEVELAND, OHIO

INTERNATIONAL DRYERS



Longitudinal Section of Each Tunnel

CANTON BRICK & FIREPROOFING CO.

New Philadelphia, Ohio

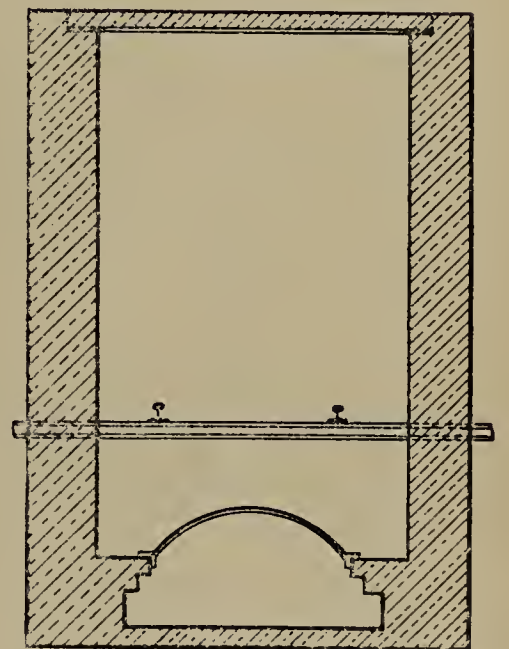
HENRY MAURER & SONS

Maurer, N. J.

OVERLAND PRESSED BRICK CO.

Denver, Colo.

Have just purchased
International Metallic Radiation
DRYERS



Section AA
Showing Metallic Radiators

Ask for Bulletin No. 40.

International Clay Machinery Co.

Dayton, Ohio, U.S.A.

Pittsburgh, Pa.

New York

Toronto, Ont., Can.

Mention THE CLAY-WORKER.

Season's Greetings

GOOD NIGHT 1922

Dear old 1922, we are glad you came; we hate to see you go; we regret the strife you brought us, but we are thankful for the joy, the happiness, the pleasure and the richness of the things you left us and we say to you, GOOD NIGHT.

Dear little 1923, we are glad to give you greeting. We heard you were coming with loads of wonderful things for us all; beautiful gifts of real needs and harmless pleasures.

Mr. Schroll, our President, says: "You will bring better and greater business."

Mr. Sachs, our Secretary, says: "You will give us fifty per cent more business than old 1922."

Mr. Mahlmeister, our Treasurer, says: "You will bring very great prosperity, as I feel it in my bones."

Mr. Justice, our Vice-President, says: "You will bring less of strife and more mutual confidence in all transactions."

So we say to you GOOD MORNING.

We want all our customers and friends to know that "MECO" products are improved in quality and design, where possible, each succeeding year. You have been pleased with our goods and service in the past; you will be better pleased in the future and you will always be satisfied in the present.

You will find great satisfaction in the use of our "MECO"

The Manufacturers Equipment



Season's Greetings

GOOD MORNING 1923

Single Roll Rock and Shale Crushers, Reciprocating Feeders, Disc Feeders, Elevators and Conveyors.

Justice Dryers—Radiated Heat and Waste Heat are most durable and economical for drying all heavy clay products.

The Underwood Producer Gas Burning System stands in greater favor today than ever before. It is making its users independently wealthy. It burns colors on face brick no other system can do. It burns all ware at a lower cost than any other method.

“MECO” Coal Handling Outfits will unload your coal from cars and put it in the bin for two cents a ton.

“MECO” Clay Cutting Wires for all cutting tables are best and cheapest. Five hundred thousand sold last month.

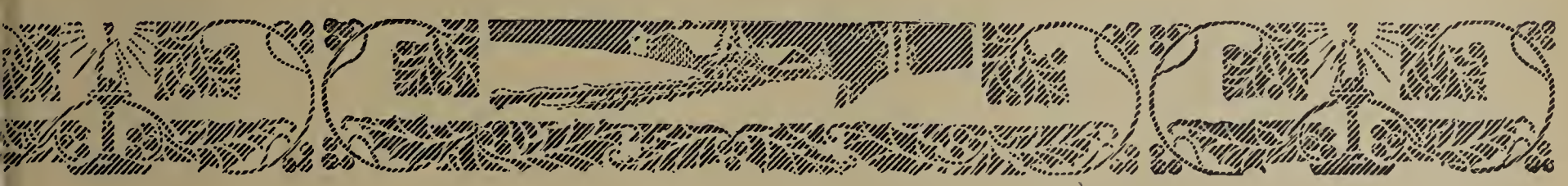
Hyatt Roller Bearing Transfer Cars, easy running, strong and durable Turntables, Winding Drums and Piano Wire Screens of the best mechanical designs. MECO Copper Hard Babbitt gives best and longest service for the price charged.

The MECO Kiln Accelerator is the latest marvel in speeding up water-smoking and cooling kilns. Fifty sold in three months.

MECO Engineering Service is Practical and will always please you.

We are yours for 1923.

Co., Dayton, Ohio, U.S.A.



CLAY DEPOSITS ALONG Lake Erie, Franklin & Clarion Railroad A GOLDEN OPPORTUNITY



Notice to Clay Manufacturers:

Valuable Clay Deposits, including Plastic, Semi-Flint and Flint Clays for high grade fire brick (safely within No. 1 Classification) and Building Brick and other Clay Products.

In many places coal underlying the clay. Coal, Natural Gas and Electric Power available.

Deposits located IN HEART OF THE GREATEST INDUSTRIAL REGION OF THE WORLD, divided approximately—6 feet Plastic Clay, 5 feet Semi-Flint Clay and 5 feet Flint Clay, eliminating the necessity of importing any materials.

If you are contemplating the construction of a new plant you cannot afford to overlook this opportunity. Modern highways and good railroad conditions.

Communicate with the

Lake Erie, Franklin & Clarion Railroad
FRANKLIN, PA.

EDITORIAL NOTES AND CLIPPINGS.

clay mined and found upon certain lands west of Owensville, Mo.

The Chamber of Commerce of Charleston, W. Va., is interested in the establishment of a brick plant in that city.

Reynolds Brothers have announced that they are interested in the formation of a company at McRae, Ark., for the manufacture of brick.

Fire destroyed a storage shed at the plant of the Cary Brick Company at Newton Hook, N. Y., causing a loss of several thousand dollars. The building was used to store the oil which is used for burning brick.

Wayne Rodenbaugh, a former employe of the A. P. Green Fire Brick Company at Mexico, Mo., and now holding a responsible position with a similar concern at Martin, Okla., was married in Kansas City recently to Miss Alice Graham, a daughter of Mr. and Mrs. J. B. Graham of Mexico, Mo.

The Banner Clay Works at Edwardsville, Ill., has been taken over by the Alton Brick Company, with headquarters at Alton, Ill. Additional machinery will be installed and extensive improvements made in the plant, which will be put in full operation.

Arthur O. Duprey, of Cleveland, O., is installing one of his large dryers at the plant of the Superior Brick Company in that city. During the last summer he installed a brick dryer and some new machinery at the plant of the Cleveland Builders' Brick and Supply Company.

M. W. Staniforth, one of the best known citizens and a pioneer brick manufacturer of Gainesville, Tex., died at his home in that city last month. Mr. Staniforth suffered a number of paralytic strokes during the summer and had never entirely recovered from same. He was at the head of the Gainesville Brick Company, and had been active in many of the business interests of the city. He is survived by a widow, four sons and one daughter.

The Thress Brick Company of Tuscaloosa, Ala., has been incorporated and work on the new plant will begin at once. The plant will have a capacity of 60,000 brick per day, and will be equipped with all modern machinery. Six round down-draft kilns and a dryer with a capacity of 600,00 brick will be built at the start. H Jones is president and treasurer of the company; J. H. Thress, vice-president and general manager, and G. A. Swim, secretary, and G. E. Moore, assistant secretary.

The plant of the Tucson Pressed Brick Company is the largest between El Paso and Los Angeles. It is prepared to manufacture on standard lines or other specifications any brick, tile or roofing products, with a quality and hardness equal to the best on the market. One of the products of the plant which has attained a high degree of recognition throughout the country and which has frequently been pronounced Arizona's perfect building material, is the Heath Unit Tile, for which it has exclusive rights in this state. Besides being the largest between the two points, the Tucson plant is prepared to manufacture products in equal quality and finish to the best which can be purchased in either city. As the result of the installation of new machinery, which converted the plant into the highest type of modern brick factory a few months ago, its management is launching now a campaign through the entire southwest to secure the recognition due on account of the excellence of their products. Manager Gardner of the plant was formerly connected with the largest brick and tile factory in Los Angeles.

(Continued on Page 600.)

**FOR THE GOODWILL YOU HAVE SHOWN
US IN THE PAST**

WE THANK YOU

**MAY YOUR CHRISTMAS BE MERRIER
AND PROSPERITY BE YOURS THROUGH
NINETEEN, TWENTY-THREE**

**WE MUST DISCARD THE MOTTO
“PUT IT THRU IN 22”**

AND

DEDICATE 1923 TO

“LET’S GO”

THE STEVENSON CO.

General Office and Works
Wellsville
Ohio

Western Sales Office
Monadnock Bldg.
Chicago, Ill.

EDITORIAL NOTES AND CLIPPINGS

W. W. Taylor and Daniel Bostic are interested in establishing a brick-making plant at Big Stone Gap, Va.

Frank Mahoney, an employe of the Fulton Fire Brick Company at Fulton, Mo., and Miss May Atterberry, also of Fulton, were married recently in Columbia, Mo.

H. E. Hicks, general superintendent of the Independent Brick Company, with headquarters at Trenton, N. J., writes they are now operating three of the four plants, all located close to Trenton, and expect to keep them going all winter. The business outlook is very good with the company.

A case of "history repeating itself" was manifested at the plant of the North Iowa Brick Company, Mason City, Iowa, when George Pappas, one of the employes of the company, lost his right arm in the same manner as he had lost his left arm about a year ago. Both arms were caught in the auger conveyor. The first time the arm was torn from the shoulder and in the last accident the arm had to be amputated close to the shoulder. This is certainly an unusual and distressing case.

Charles W. Dawson, who was seriously injured at the plant of the Harrisonville, Mo., Brick and Tile Company, and who is a patient at the Vineyard Park Hospital in Kansas City, continues to improve, although the progress is slow because of the nature of his injuries. His right arm was broken and lacerated and a bone in his right jaw was fractured, when a dump cart, used to haul shale from the pit to the plant, ran over him. It will be some time before he is fully restored to his former self.

C. S. Claussen, Fred C. Rathje, Charles Pasal, W. L. Woods, Thomas Brisch, Christian H. Becker and other prominent building men have organized the Consumers' Brick Company, which has already contracted with the Pullman Company to take over 127 acres of land in the town of Dolton, south of the Indiana Harbor Belt Railroad tracks and East Ingleside avenue, where a one-machine brickyard will be constructed, and it is expected will be turning out good common brick by January 1. The soil has been tested and found suitable. The manufacturing plant of the company will be within trucking distance of the south end of the loop. The company's authorized capital is \$350,000.

Judge Sessions, in the United States District Court at Grand Rapids, has denied the petition of certain creditors asking that the Zeeland Brick Company, Zeeland, Mich., be declared bankrupt and assessing all costs in the case against the petitioners. In spite of the many handicaps, such as the fire at Hamilton yard, the coal shortage and high cost of coal, the railroad strike and car shortage, etc., the season's operations have been reasonably profitable. Money borrowed on receiver's certificates for operating purposes has all been paid and there is a goodly cash deposit at the bank, with practically all expenses incurred satisfied. There is strong demand for brick at prices that insure profitable operation at this time and prospects are good for the next season.

Due to a greatly increased demand for its product, the Van Briggie Pottery, Colorado Springs, Colo., has concluded plans for an expansion of both its plant and its distributing system, according to I. F. and J. H. Lewis, proprietors of the concern. A new kiln, 20 feet in diameter, is to be built at the pottery, construction work to start very soon, while contracts have been closed with two of the biggest jobbing firms in the country, which will handle the output of the local firm in the future. The new kiln, which will increase the output of the pottery by \$35,000 each year, will make a total of three of the larger size in operation early in the coming year. The three big kilns will be used exclusively in the turning out of the pottery products, while the smaller kilns will be used for the side lines. The Van Briggie pottery, which started manufacturing radio receiving sets recently, now has increased its capacity until it is putting 150 sets on the market each month.



Eagle Shale Planer at the Plant of the
Redfield Brick and Tile Works, Inc.
Redfield, Iowa

THE EAGLE SHALE PLANER

The Modern Way
of
Winning Clay

Because:—It is economical in the use of power and labor.

Cuts out the Powder Bill and danger from the use of Explosives.

But best of all, it secures a perfect mixture of the clay stratas, and you all know what that means for your product.

"ASK THE MAN WHO OWNS ONE"

Get in line to compete with him and write us

EAGLE IRON WORKS

Builders
Des Moines, Iowa

Classified Advertisements

FOR SALE, WANTED, ETC.

Advertising rates in this column 35 cents a line, or 6 cents a word each insertion; about six words make a line. Cash should accompany the advertisement to insure insertion. No ad inserted for less than \$1.00.

WANTED, ETC.

WANTED.

Second-hand small dry pan and down draft kiln bands, iron and grates.

DAVID SOAMES,
12 1 cm Vincennes, Ind.

WANTED.

30,000 wooden pallets suitable for use in open air drying racks. Give size and full description.

EXCELSIOR BRICK CO.,
10—3d. Menomonie, Wis.

WANTED.

E. M. Freese Union, or J. C. Steele No. 4 brick machine. Automatic side cutter. 12,000 feet, 12 or 16-lb. relaying rails.

Address Georgia,
12 2 cm Care Clay-Worker.

WANTED.

Used or second-hand Dryer Cars, soft mud rack type, also stiff mud single, double and triple deck pattern. State quantity, condition, best price.

Address, M. E.,
12 1 d Care The Clay-Worker.

WANTED

Thorough Brickmaker wants position with a large concern where ability will be appreciated. Best possible references.

Address S. B.,
12 1 c Care Clay-Worker.

WANTED.

By a technical graduate a job in southern California. Thirteen years clay manufacturing experience. Address

W. S. W.,
11 2 cm care Clay-Worker.

WANTED.

Fire brick superintendent for plant with well established product and trade; a man who now has a good job but wants to advance; a man who does not answer every ad. he sees. We offer a permanent position at a good salary.

Address WELLS,
10 3 cm care Clay-Worker.

WANTED.

Good, capable inside foreman for brick and tile plant.

THE ALLIANCE BRICK CO.,
12 tf d Alliance, Ohio.

WANTED.

Position as Superintendent who has had practical experience in overhauling clay plants as well as superintending the manufacture of all kinds of hollow ware and brick.

Address S. K. C.,
12 3 cm Care The Clay-Worker.

WANTED.

We are in the market for second hand 9-ft. Stevenson dry pan in first-class condition. Give full description, age of machine, time operated and where same can be inspected. Address

KANE BRICK & TILE CO.,
12 2 dm St. Mary's, Pa.

WANTED.

Used, heavy duty, steam shovel in good repair, with 40-foot boom and 2 or 2½ yard dipper. State kind of work has been doing, how long used, where can be inspected, price, etc. Address,

W. L. WOODS,
607 West 66th St.,
12 1 cm Chicago, Ill.

WANTED.

Position as superintendent of stiff mud clay plant manufacturing brick, building block or drain tile, by practical man of many years experience in managing plants with the best of results. Am an A-No. 1 burner. References furnished.

Address L. M. J.,
2 cm Care Clay-Worker.

WANTED.

One dry brick press, vertical or rotary. Also one hardening cylinder for sand-lime brick about 6 ft. diameter—60 ft. long, with track. Please state age, condition, model, and approximately how many bricks were made on the press you offer. Also, please state where the press may be inspected, and whether it is now in operation.

MT. GRETNIA BROWNSTONE CO.,
13 3 dm Lebanon, Pa.

WANTED.

1 250-300 H. P. slide valve, throttling governor, stationary engine, side crank, complete with flywheel not over 10 ft. diameter, 100 lbs. steam pressure, not over 120 R. P. M. Either new, or second-hand, in good condition will be considered. In quoting, please furnish cut or blueprint or complete description, stating where this engine may be inspected. Do not quote on Corliss or 4-valve type.

ELK FIRE BRICK CO.,
12 1 d St. Marys, Pa.

FOR SALE

FOR SALE.

One new steel leg bucket elevator, 12-inchx7-inch buckets, 32-feet centers. One Freese C-20 Cutter.

BRADFORD BRICK & TILE CO.,
12 tf d Bradford, Pa.

FOR SALE.

First-class Ladle Brick, Building Brick and Drain Tile proposition in East, cheap.

Address Ladle Brick,
12 1 d Care Clay-Worker.

FOR SALE.

Six hundred double deck steel dryer cars, 8 ft. long, 41 inches wide over all, 31-inch track gauge.

KANKAKEE TILE & BRICK CO.,
11 5 d Kankakee, Ill.

FOR SALE.

Drain Tile and Building Block Plant, four 13,000 4-inch capacity kilns, buildings of block construction and new. All machinery in first-class condition and ready to operate. Located in small town on good railroad. Demand exceeds capacity. Owner not able to operate longer on account of age.

Address Ohio,
12 3 cm Care Clay-Worker.

FOR SALE.

Drain Tile Plant, consisting of two kilns; large brick, eight track, steam dryer; machinery of Brewer make; nine acres of clay. Plant in operation this year. Good demand and extremely well located for shipping. To experienced clayworkers this plant will appeal as well as price. Address

FRANK WITTS,
12 2 cm Sullivan, Illinois.

FOR SALE.

An up-to-date brick and tile plant, equipped with boiler and engine, belting and mill. Everything necessary except dryer and kilns. Good houses, garage, office and sidetracks. Abundance of shale and clay on the ground. Good drainage. Also coal that can be placed at the plant at less than \$3.00 per ton. Our location is admirable, with splendid shipping facilities to Indianapolis, Cincinnati, St. Louis, Chicago and intermediate points. If not disposed of entire, will sell machinery separate, all of which is new, and modern. Never been used, of J. D. Fate make. Address,

BARGAIN,
8 f d Care The Clay-Worker.

Classified Advertisements.

FOR SALE.

Several letters patent on air cell bricks or load bearing facing tile. For particulars write to,

JAMES P. WILLIAMS, Consult. Engr.,
Kings Highway at Maffit Ave.,
7 tf d St. Louis, Mo.

FOR SALE.

One No. 10 H. Brewer Vertical tile machine. Dies are from 2½-inch to 12-inch in diameter. Also dies and table for making wire cut brick, side and end cut dies 4-inchx8-inchx12-inch, etc. Also wooden pallets and racks for 200,000 brick capacity. Everything in extra good condition. For particulars, write

WARREN BRICK & TILE CO.,
12 4 d Warren, Mich.

MANUFACTURERS!!

LOCATE YOUR PLANT AT FROSTBURG TO SELL THE EASTERN MARKETS

Frostburg, Maryland, due to its location, has an advantage over all Ohio cities of from \$2 to \$4 per ton on brick, sewer pipe, tile and other clay products to big eastern markets between Boston and Richmond. It has the same, or better, freight rates than are in effect from Western Pennsylvania brick centers.

The Supervising Ceramist of the Bureau of Mines declares the clays found in abundance at Frostburg are admirably adapted for the manufacture of face brick in buff gray and other shades, sewer pipe, building and drain tile, architectural terra cotta and other clay products. The district is served by three trunk lines, Baltimore & Ohio, Western Maryland and Pennsylvania. All inquiries held strictly confidential. Full information furnished by

THE FROSTBURG COMMERCIAL CLUB,
10 3 cm Frostburg, Md.

BUSINESS OPPORTUNITY.

A new textile and brick plant. Exceptional site for large brick, tile or hollow ware proposition. Two hundred acres best Georgia blue clay, free from grit. Exceptional water, power and railroad facilities. Will take stock with established concern. Correspondence solicited. Apply

COLLIER ENTERPRISE,
12 1 dm Barnesville, Georgia.

GRAND OPENING FOR A BIG TILE PLANT.

Clay Tile and Brick plant, adjoining city of Willmar, for sale. Complete outfit in operation; 60 acres of land with plant; 40 acres clay, 30 feet deep; 15 feet yellow and 15 feet blue (See Bulletin No. 678 clays of Minn.); open 30 years; spur to plant. Ship four ways. Concrete highway No. 10 by plant. Entire output of tile sold every year to county and farmers; also thousands of dollars worth shipped in; Judicial Ditch No. 9 and No. 12 under consideration. Estimated cost three million two hundred thousand dollars, both within five miles of plant. Will require over 900 miles of tile. Tile ring like a bell and second to none; good drainage from clay bed. Building blocks and brick perfect. Look this up. Write me,

W. J. RUDDY,
12 1 dm Willmar, Minn.

If...

You Want
to Sell
or Buy...

Second-hand Clayworking Machinery, Tile Mills, or anything pertaining thereto.

If...

You
Want a Man

for any position or a position in any connection with the Clayworking Trades use the

For Sale
and Want
Columns
of...

The...

Clay-Worker

RATES

Books of Interest to the Clayworker

REFRACTORIES & FURNACES, by F. T. Harvard, E. M. Price \$4.

Gives much valuable information relative to the properties, preparation and application of materials used in the construction and operation of furnaces.

CERAMIC GLAZES, price \$10.00.

The book is remarkable for its systematic thoroughness, no more finely arranged charts of glazes in the way of careful gradations, coupled with extensive variations, could well be imagined.

Sold by

T. A. RANDALL & CO. (Inc.), Indianapolis.



The Parker-Russell
Mining and Manufacturing Co.
ST. LOUIS, U. S. A.

Fire Clay and Silica Products of Quality for Service...
Especially for Kiln Construction.



MANGANESE

BEST QUALITY MANGANESE, CAREFULLY AND UNIFORMLY PREPARED FOR BRICKMAKING. WRITE US FOR SAMPLES AND PRICES.

NATIONAL PAINT AND MANGANESE CO.
LYNCHBURG, VA.

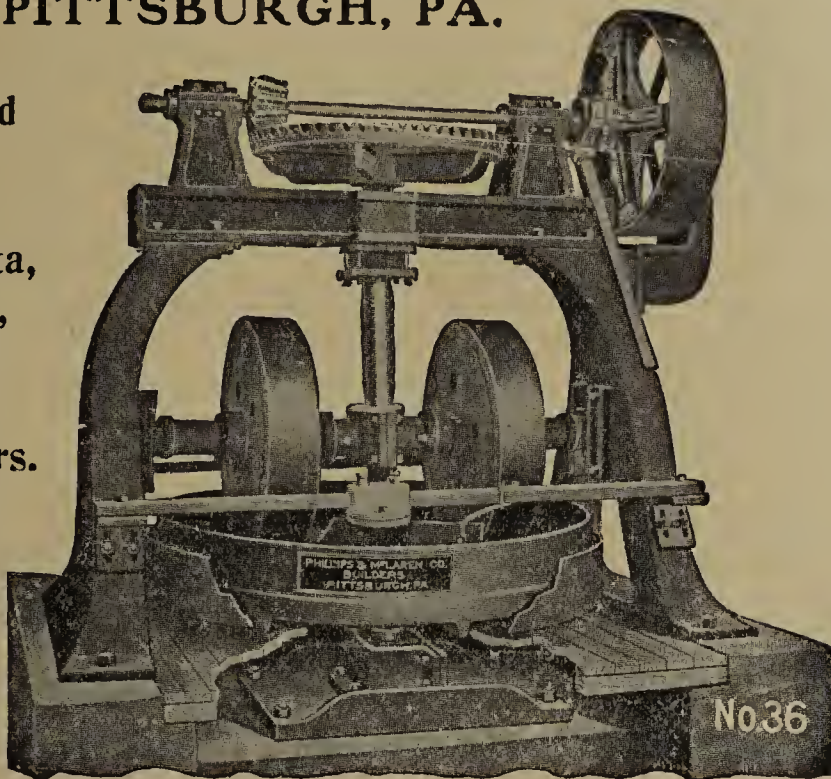
Miners and Grinders for More Than a Quarter of a Century

PHILLIPS & McLAREN CO PITTSBURGH, PA.

Builders of
Pittsburgh Standard
Dry and Wet
Grinding Pans
for Brick, Terra Cotta,
Sand, Cement, Ore,
Refractories, etc.
Also
Rock and Ore Crushers.

When writing for prices state
kind of Clay or Material to be
ground and capacity desired.

Eastern Sales Office
Stephen Girard Bldg.
Philadelphia, Pa.



Brick manufacturers who have anything in the way of second-hand machinery or appliances, will find a ready market for same through a card in our Classified Advertisements. Superintendents, yard foremen, burners, etc., desiring to make a change, will do well to run a Wanted ad in our classified department. Clay-Worker ads bring results.

Anchor Brand Colors

For Mortar Cement and Brick.

BROWN, BLACK, RED AND BUFF.

Strongest and Most Durable.

Manufactured by

C. K. WILLIAMS & CO.

EASTON, PA., U. S. A.

Correspondence solicited.

Chattanooga Paint Co.,

Chattanooga, Tenn.

Manufacturers of

Red Oxides for Brick
makers' Use.

ECLIPSE MORTAR
COLORS,

Red, Brown, Buff, Black.

IMPROVE THE COLOR OF YOUR CLAY PRODUCTS BY USING R & H PRECIPITATED CARBONATE OF BARYTES

"AMERICA'S LEADING CERAMIC MATERIAL HOUSE"

THE
Roessler & Hasslacher Chemical Co.

CHICAGO
BOSTON

TRENTON
PHILADELPHIA
NEW YORK
CLEVELAND
PITTSBURG
SAN FRANCISCO

KANSAS CITY
NEW ORLEANS

Mention THE CLAY-WORKER.

Written for THE CLAY-WORKER.

MILWAUKEE AND WISCONSIN CLAY AND BUILDING NEWS.



CLAY INDUSTRY in Milwaukee is just launching on its quiet season and it is still too early to give a resume of 1922 because of the fact that local concerns have not been able to realize the full results of the year's work. Unusually mild weather during the past month has given the clay industry in this section of the country a much later season. November, as a rule, sees the falling off in the building business, but the past November has been a record-breaking month for

building activities in this part of the country. Builders here have been kept on a steady hop and jump and it is only during the past three or four days that the quietus has been put on the brick business. From now on, conditions are expected to slow down considerably.

"The outlook for 1923 in Milwaukee is very bright," according to Charles Burnham of the Burnham Brothers Brick Co. "The trouble for the last two years here has been that the supply is not equal to the demand and we anticipate an even bigger demand next year. It is with the view of taking care of this augmented demand that we have erected our new plant. Building conditions, at least for the next three or five years, will be exceptionally good in this district."

Building permits issued here during the past year indicate that the greatest amount of building has been done by private owners, that the buildings erected have been for the most part small residences, in which the material used is mostly wood and face brick. These conditions will change, however. The building of private residences will continue, of course, but the erection of industrial and investment buildings will show a larger increase, proportionately, next year than the residential buildings. Milwaukee is due for an increase in the number of factories and stores according to present indications.

Piece-meal contracts are now being let for the erection of the Elks' new clubhouse on Juneau Place. The foundation contract has been awarded and bids have been entered for the mason work, but this contract has not as yet been let. The specifications for the new building call for face brick with trimmings of Bedford stone.

Over 90 per cent of the higher grade homes now being erected in Milwaukee and its suburbs are of face brick construction, according to Thomas Dever of the Ricketson-Schwarz Co., Milwaukee. "The very mild fall weather has been exceedingly favorable to our line of business and, up to the present time, we have not experienced any appreciable lull in our work. We are still hitting on all four," Mr. Dever said. "The past year has been essentially a home-building year in Milwaukee and this vicinity. And the general public seem to be appreciating, more and more, the superiority of brick as a building material over its substitutes."

Local brick companies are still checking face brick in very rapidly for this time of year and prospects for next spring and summer are very bright. A great many people who were a trifle shaky about building homes during the past year and who have been renting for the winter, have already sent in for bids through the various contractors.

Milwaukee is to have a new continuation school which is to be of face brick construction. Approximately a half million bricks will be used on this job.

The new government hospital buildings which are being erected on National Avenue in West Milwaukee have al-



With Chase Flexible and Reversible Bearing and Folding Deck.

Single, Double and Triple Deck Dryer Cars,
Transfer and Dump Cars, Turntables,
Switches and Trackage.

The Chase Foundry & Mfg. Co., Columbus, O.



Performance has two dimensions— Quality and Quantity

We could tell you of the endless research in both field and laboratory that has developed such improvements as Automatic Temperature Control. We could point with pride to equipment that winds moving elements with wire as fine as a hair—or to the 101 other differences in Brown methods that are

responsible for Brown accuracy and stamina.

But it's what Brown instruments do in the field, in every-day, hard service, that counts.

In the field Browns are supreme. There are nearly as many Brown Pyrometers in use in America as all other makes combined—because they make good, and keep right on making good, without coaxing.

THE BROWN INSTRUMENT CO.

4514 Wayne Ave.

Philadelphia, Pa.

New York Boston Pittsburgh Cleveland Detroit Montreal
St. Louis Birmingham Denver Los Angeles San Francisco Chicago

Brown Pyrometers
Most used in the world

ready consumed more than a million bricks and the work has not yet been completed.

Mercy Hospital, being erected at Oshkosh, Wis., has consumed over a half million bricks. The building is of face brick construction.

The new Stevens Point High School, Stevens Point, Wis., has been sold 250,000 face bricks, as also has the newly erected Whiting Hotel of Stevens Point.

Milwaukee's east side is to have a new pumping station—the Riverside pumping station. The new structure will cost over a half million dollars and the interior and exterior will be of face brick.

Marquette University's newly completed gymnasium, facing Clybourn street and extending from Fifteenth to Sixteenth, is of face brick construction, interior and exterior. The university's new dental school which has just been completed and is adjacent to the gymnasium, is of similar construction. Local brick companies are figuring on entering bids for two new buildings which will soon be erected by Marquette. These will be the new Marquette law school and the science buildings. The former will be built east of the Gesu Church on Grand avenue and the latter will occupy the space west of the church, extending to Thirteenth street.

Freight conditions have affected the face brick industry somewhat, especially on material coming through from Pennsylvania and Ohio. Inability to get some of this through has slowed down construction work and, in some cases, resulted in loss of contracts. The situation has been somewhat cleared, however, so that now material is coming through in fairly good shape.

Present indications point to a boom during the next year in church and school building, according to local face brick manufacturers. If present plans are carried out, the list of Milwaukee schools and churches, by the end of next year, will have greatly increased. An addition to the new half-million-dollar Grand avenue school is being planned by the school board. St. Rose's parish, Thirtieth and Sycamore, is to have a new \$400,000 school edifice and convent, work on which will be started in early spring.

The building construction work in the city of Oshkosh during the past season has boomed, compared with a number of previous years. In the ten months, a total of 905 building permits were issued, representing an estimated cost of \$857,440. Prospects for building work during the winter are bright and plans are already being made for extensive construction work in the summer of 1923.

The face brick for two new telephone exchange additions at Fond du Lac, Wis., aggregating \$40,000, will be furnished by the Ricketson-Schwarz people of Milwaukee. This company will also furnish the brick for the new Mt. Scholastica Academy, Atchison, Kas., the architects of which are E. Brielmaier & Sons of Milwaukee. More than a million face bricks will be used in the construction of this academy.

A new warehouse will be erected at La Crosse, Wis., by Louis E. Meir, dealer in brick and tile of that city.

Ricketson-Schwarz of Milwaukee was awarded the brick contract for a new store building, 50x100, to be erected on West Water street, between Sycamore and Clybourn, for the Home Real Estate and Investment Co., M. & M. Bldg.

A kind of brick which is meeting with favor among the wealthier builders of Milwaukee is the so-called distorted brick. The newly erected home of Walter Kohler, Kohler, Wis., contains 117,000 of these peculiar bricks. The recently completed Fred Vogel home on Lake Drive, Milwaukee, has consumed 125,000 of these bricks.

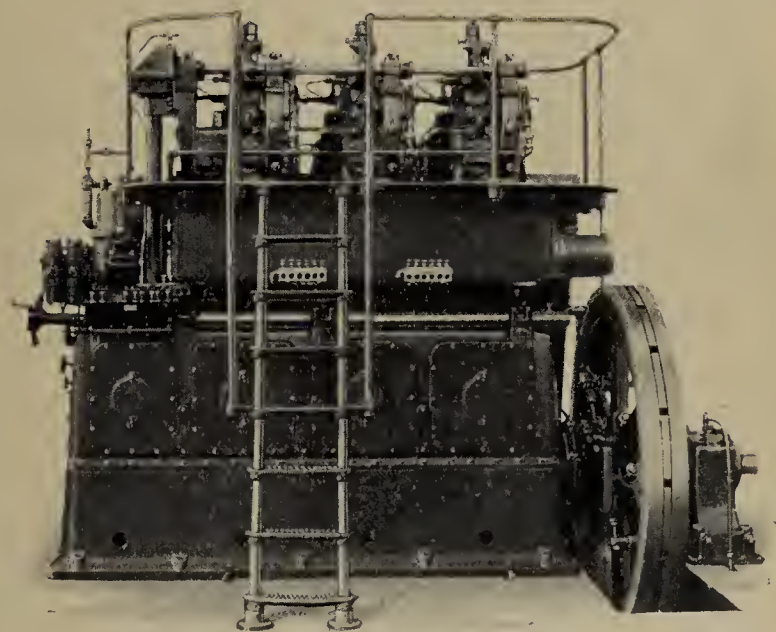
A. BADGER.

Statistics show that it costs money to hire and train a new man, but if he proves worth it it's a good investment.

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The Gates Automatic
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From a Coal-Saving Stand-
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Equipped.

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PRESSES

*None
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SINCE
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UPRIGHT
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WE BUILD A BRICK MOULD SANDER WHICH OUR CUSTOMERS CONSIDER A VERY EFFICIENT AND ECONOMIC MACHINE.

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Any Thing Used On
A Brickyard or a
Clay Plant.

We Handle it.
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Chicago, Ill.

Written for THE CLAY-WORKER.

OHIO CLAY NEWS.



WITH the coal situation easing and labor apparently satisfied, the only obstacle interfering with the brick manufacturing industry in the Canton district is the inability to get cars. Paul B. Belden, of the Belden Brick Company, Canton, in an interview with a representative of The Clay-Worker, said that at the present time that the railroads were getting less than 50 per cent. of the wanted cars to the brickmaking firms in the district and that this shorting coming was seriously handicapping the manufacturers.

Predicted brick price increases have thus far failed to materialize and prices at this writing are firm, officials of several of the leading companies here stated this week. There is no possibility of an advance in prices before spring, an official of one of the large concerns said this week.

The coal situation, which for many months threatened to demoralize the industry, has eased to such an extent that many of the plants have sufficient coal on sidings to insure operation most of the winter. Prices of coal, although fluctuating, are giving the manufacturer little concern at this time and he is glad to get fuel at most any price.

Speaking of the labor situation, one manufacturer said that "the employment is 100 per cent." and from all indications wages now being paid are very satisfactory. Many of the plants the past several months have been idle owing to labor wage differences. Recent advances have been granted.

Industrially Canton is booming with prospects of further improvement after the first of the year. Announcement was made this week that the Pennsylvania Company will add 500 men to its working forces at the terminal here, to take care of added freight business which has been on the increase since early October.

Production of building brick is on the increase and practically all of the larger plants report they are operating 80 per cent. and better.

Discussing the outlook for the remainder of the winter and early spring manufacturers recently declared that much big building was in progress even now and that spring held much for the brick manufacturer. Home building has aided the brick industry materially the past two months.

Every plant of the Metropolitan Paving Brick Company in the Canton district is in full operation at this writing and indications are that they will continue steady operation until well into the first of the year.

Lack of cars is holding up shipments which road contractors need badly to finish jobs before the bad weather sets in. The paving brick industry looks very bright for the future, officials say.

Operations are on the increase at the plant of the Canton Brick and Fireproofing Company at Canton, according to J. B. Burwell, an official of the company. This firm recently took over holdings of another company here and has made extensive improvements. Business with the firm is very good, officials said, and spring business looks big.

The company will operate their plant all winter at a 40,000 daily capacity, officials of the concern announced recently. Business prospects are very bright for this concern and orders are very plentiful. Contemplated building in the Akron district gives officials hope for continued heavy business in common face brick. Until this week the plant has been producing 50,000 brick a day. The car shortage is hindering activities somewhat, officials said this week. The coal situation has eased and shipments are being received regularly, officials said.

Prices have been firm for several weeks and there is no indication of a price advance until after the first of the year at least.

Operations were resumed at the Chelsea China Company, New Cumberland, W. Va., following the return from Europe of C. E. Jackson, of Wheeling, head of the concern. Several changes will be made at the New Cumberland plant, but it will continue the manufacture of hotel ware.

Monthly output of the Globe Brick Company at Kenilworth, near Newell, W. Va., will be 2,500 daily when improvements now under way are completed. New machinery for the manufacture of high grade dry press brick, consisting of the latest style dry pan which is fed by a device that will deliver a uniform amount of clay to the plant and which does not require the attention of an employe, and new screens are being installed. When the new equipment is installed the Kenilworth plant will be one of the most modern in the Ohio Valley.

The Snyder Brick Company, Ottawa, Ohio, will operate through the winter for the first time in history. They have received an order for 1,000,000 hollow blocks. This is the largest order ever placed with this concern. The plant will be kept on full capacity for months.

Cost of building material in Akron, especially brick, is lower than in most Ohio cities, according to a Department of Commercial Bulletin, issued Saturday, showing average prices paid by contractors September 1 for materials delivered on the job. Bricks cost \$14.50 a 1,000, compared with \$18 in Cincinnati and \$23 in Lorain. Prices on other materials show less difference.

The land, building, machinery, materials, chemicals, shop and office fixtures of the Florentine Pottery Company in East Cambridge, owned and operated by the Pfau Manufacturing Company of Cincinnati, Ohio, were sold recently at a trustee's sale in bankruptcy to E. S. Romaine, of Wheeling, W. Va., for \$50,000. The property was appraised at \$75,000.

The W. S. George Pottery Company at East Palestine have been granted permission by the secretary of state to increase its capital stock from \$500,000 to \$1,500,000. The move, it was explained at the office of the company, was merely to convert accumulated assets of the concern into stock to meet future needs. No improvements or expansions are planned by the concern at the present time, it was stated.

Announcement is made that the Crouse Clay Products Company, Akron, Ohio, will erect immediately a factory building on East South street. The building is to be of fire-proof construction and two stories high.

Announcement is made of the erection of a plant at Alliance, Ohio, by the Manufacturers' Sales Company, which has been incorporated for \$100,000, and which will engage in the manufacture of decorated dinner ware. A one-story brick plant occupying a site 85x200 feet will be erected at once. It is planned to provide two modern decorating kilns in the new plant with provision for from four to six additional kilns when the growth of the concern warrants.

Charles W. Foreman, president and general manager of the Owens China Company, Minerva, Ohio, resigned his position a few weeks ago. Arthur F. Calerdine, of Minerva, has been chosen his successor. Foreman has been connected with the company for the past seventeen years, coming to Minerva from Pittsburgh, Pa., in 1905. He was chosen general manager of the firm in 1909 and a short time later was elevated to the presidency. According to reports, Mr. Foreman is planning the erection of a new pottery.

A BUCKEYE.

It is time to put up Build with Brick signs, and if you have not already been doing your share of this, get busy, for they are a great help to the cause and cost but little.

MANGANESE

We wish to announce that our Sales Office has been moved from CHARLESTON, WEST VA, to WOODSTOCK, Virginia.

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We mine and very carefully prepare all of our own product and therefore guarantee that each shipment will be the same.

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WOODSTOCK, VIRGINIA.

FOR BRICK PLANT KILNS

there is no more effective, economical or more simple method of indicating and recording temperatures than by using Thwing Pyrometers. They eliminate guess work and the loss it entails. They enable your burners to hold even temperatures and improve the quality of the finished ware.

Without obligating you we will be glad to explain the merits of Thwing Pyrometers in detail.

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WM. R. MARTIN

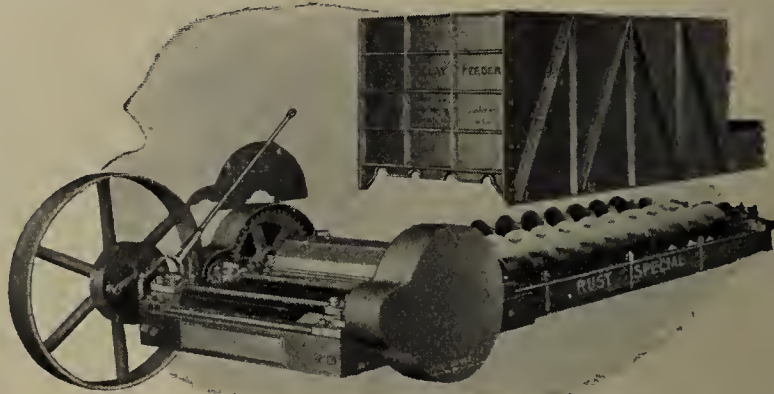
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Clayworking Engineers

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PATENTED CABLE DELIVERY SYSTEM
"MARTIN" STEAM RACK PIPE DRYERS
DRY PANS — CLAY CRUSHERS
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OUTFITS COMPLETE



You Must Cut Your Costs---But How?

Use the RUST SPECIAL FEEDER MIXER. It will save the labor of two or three men and raise the efficiency of your plant in general. It keeps your offbearers busy at all times and the repairs and upkeep are too low to be figured.

Write today for information concerning all MARION EQUIPMENT for clay plants. No obligation whatever.

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"OHIO" ROLLED EDGE STEEL BRICK PALLET

STYLE NO. 8. For Rack Cars.

(Patented)

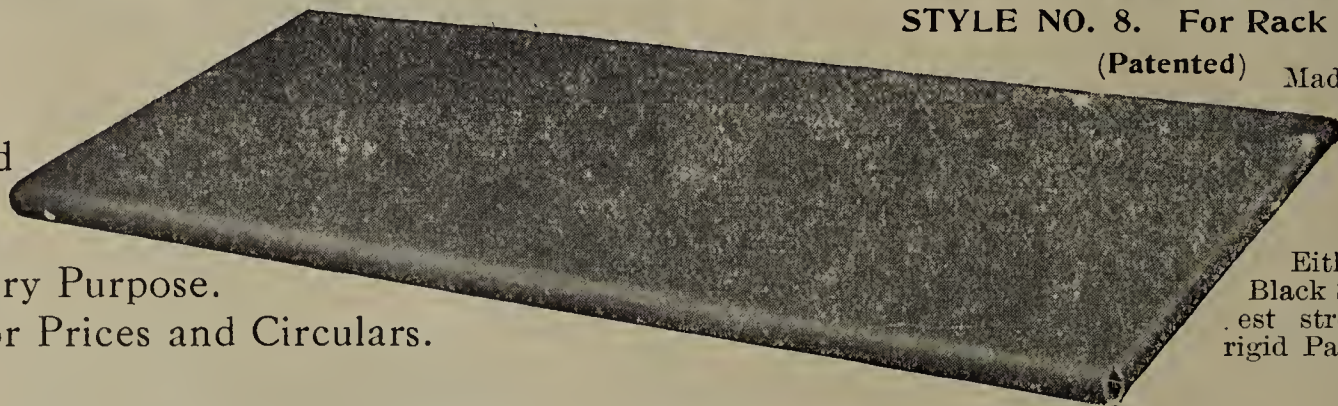
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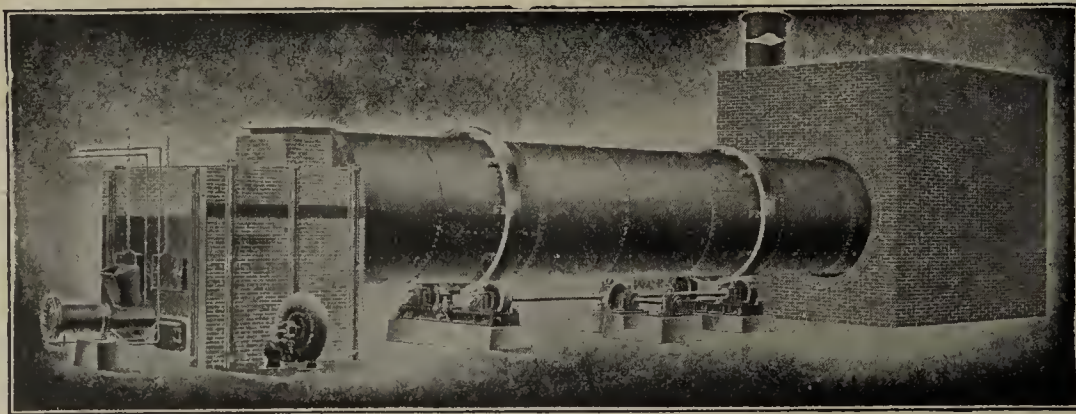
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YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

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THE CLAY WORKER



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A wish for Christmas happiness,
And for a New Year that shall bring
The very best of everything."*

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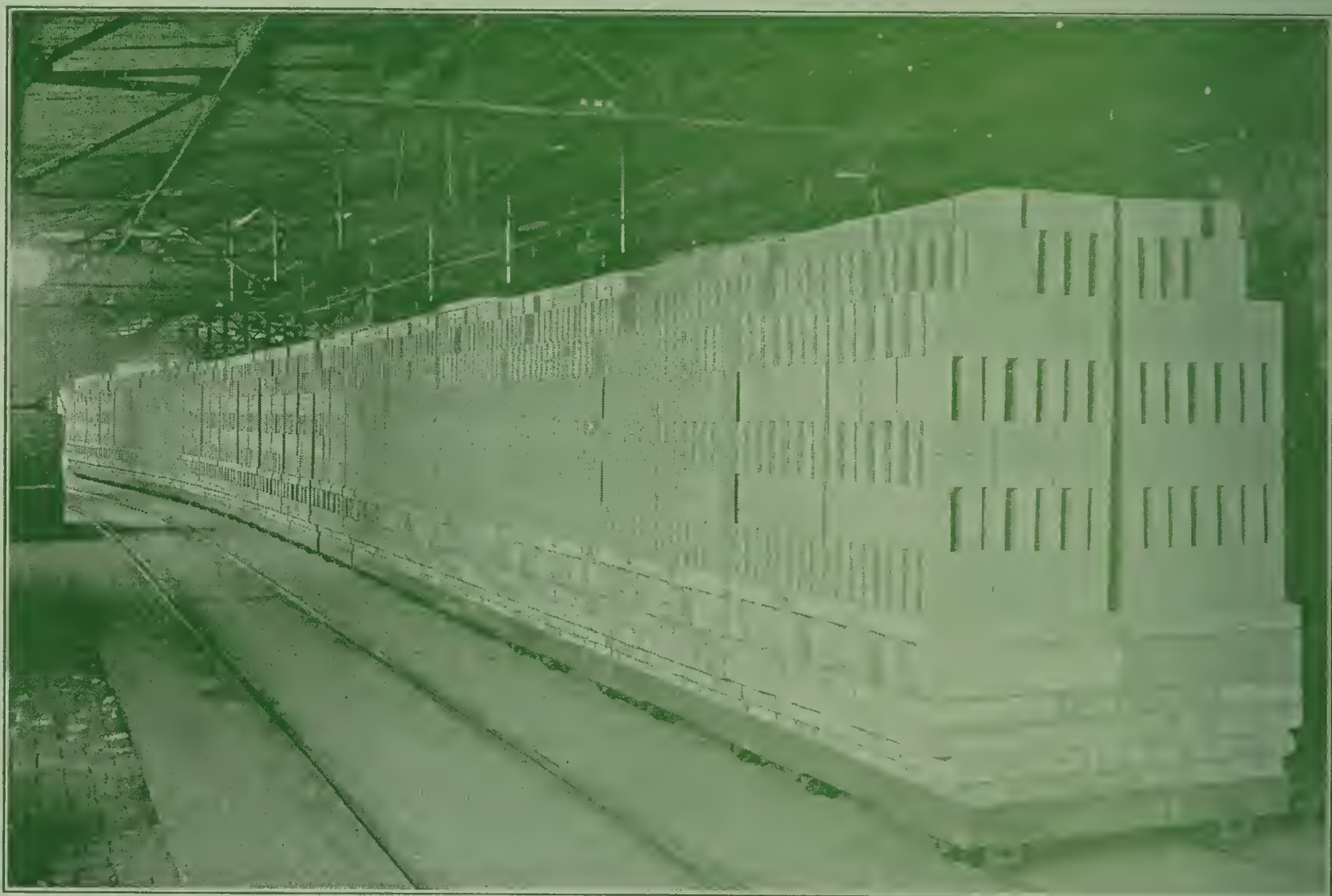


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American Dressler Tunnel Kiln burning 1,000,000
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INCREASED PRODUCTION—LOWERED COSTS

That's what you're looking for—and so are we.

Dressler Engineers know that in order to sell you a Dressler Tunnel Kiln, they must prove Dressler Kilns are capable of giving you more and better production at less cost than by other methods.

Dressler Kilns are the **only** Tunnel Kilns actually burning commercial tonnages of coarse clay products.

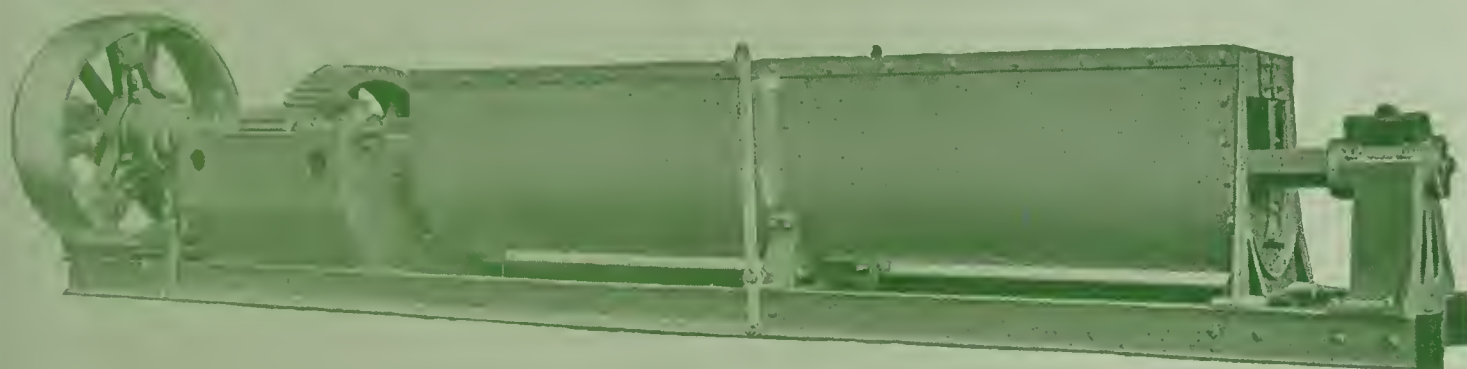
Write and ask about our forty (40) successful installations burning twenty-four (24) different products.

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1. A sub-base of steel extending the full length of mill including bearings. This maintains proper alignment and insures a rigid self-supporting mill.
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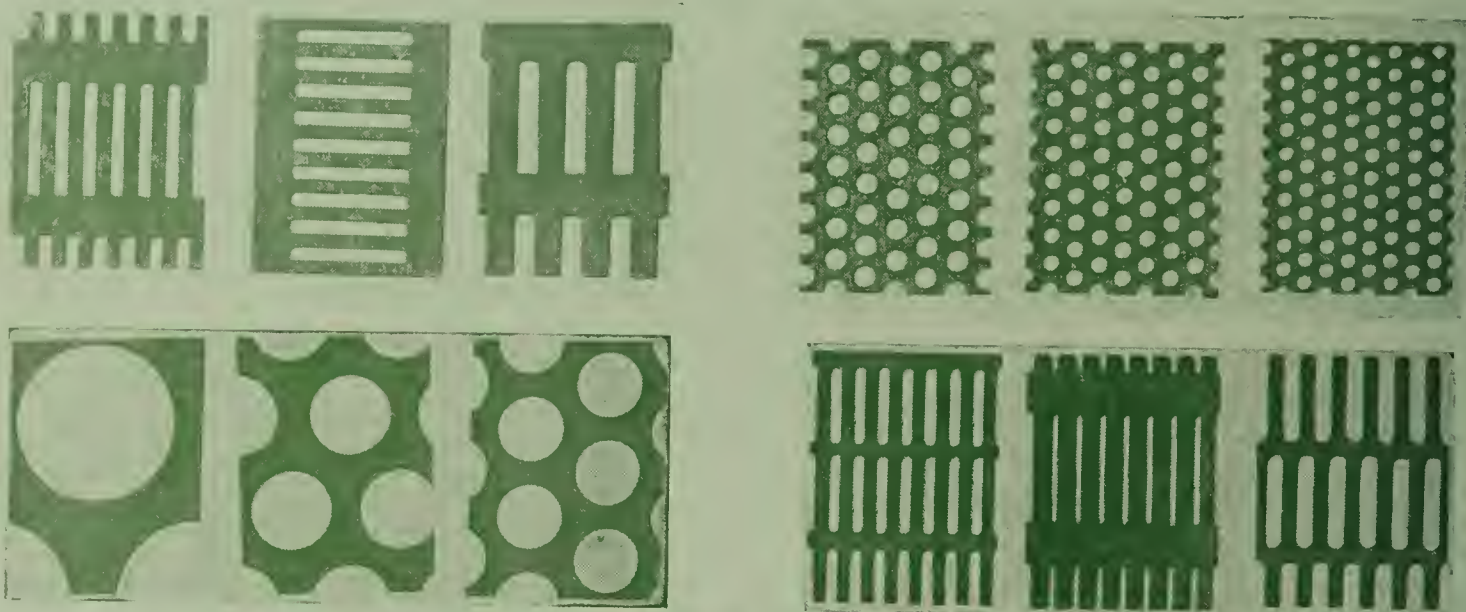
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As well as to those we shall be pleased
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We hereby extend
CHRISTMAS GREETINGS
and best wishes for a
PROSPEROUS NEW YEAR.

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Waste Heat Dryer Specialists

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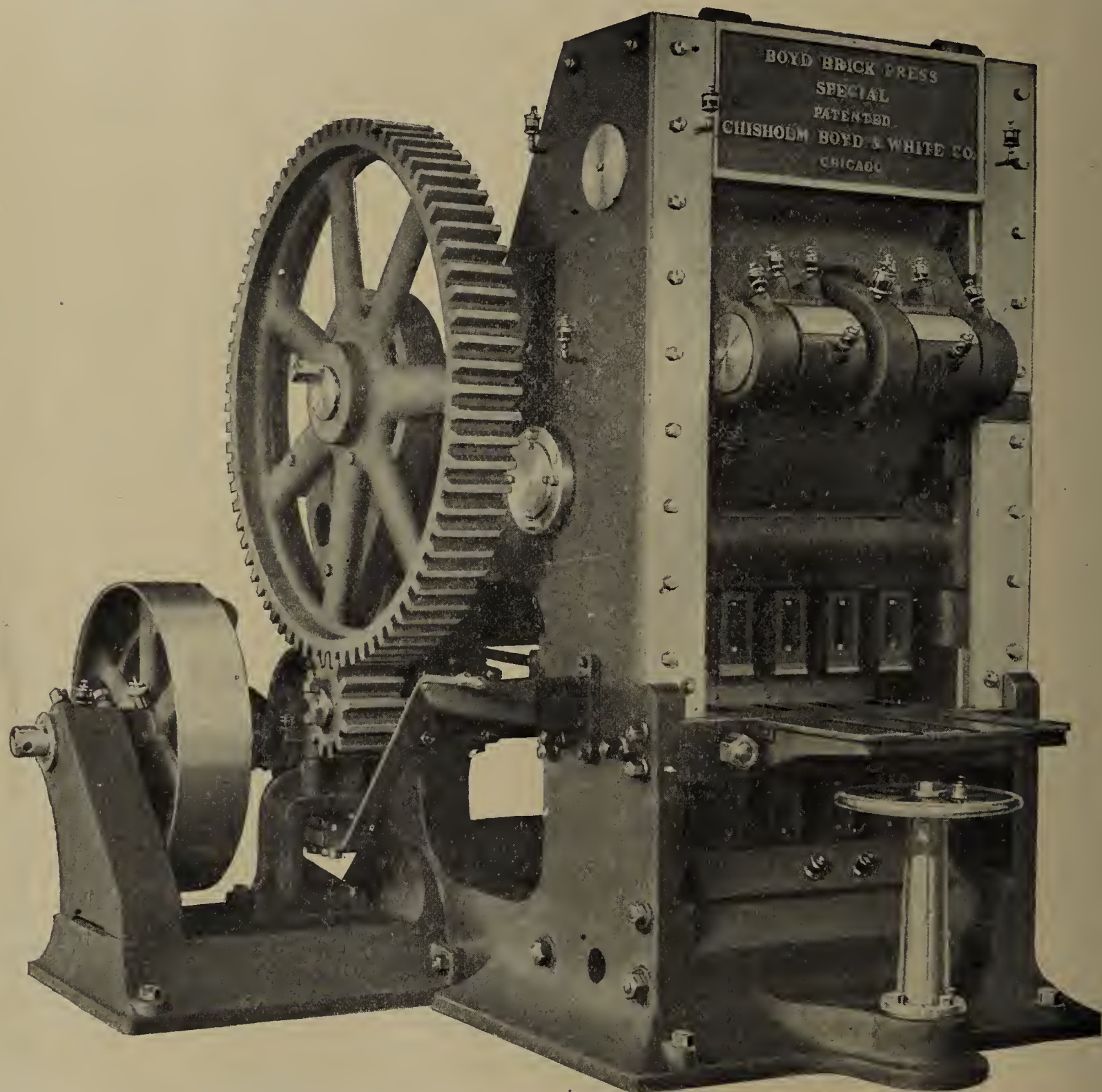
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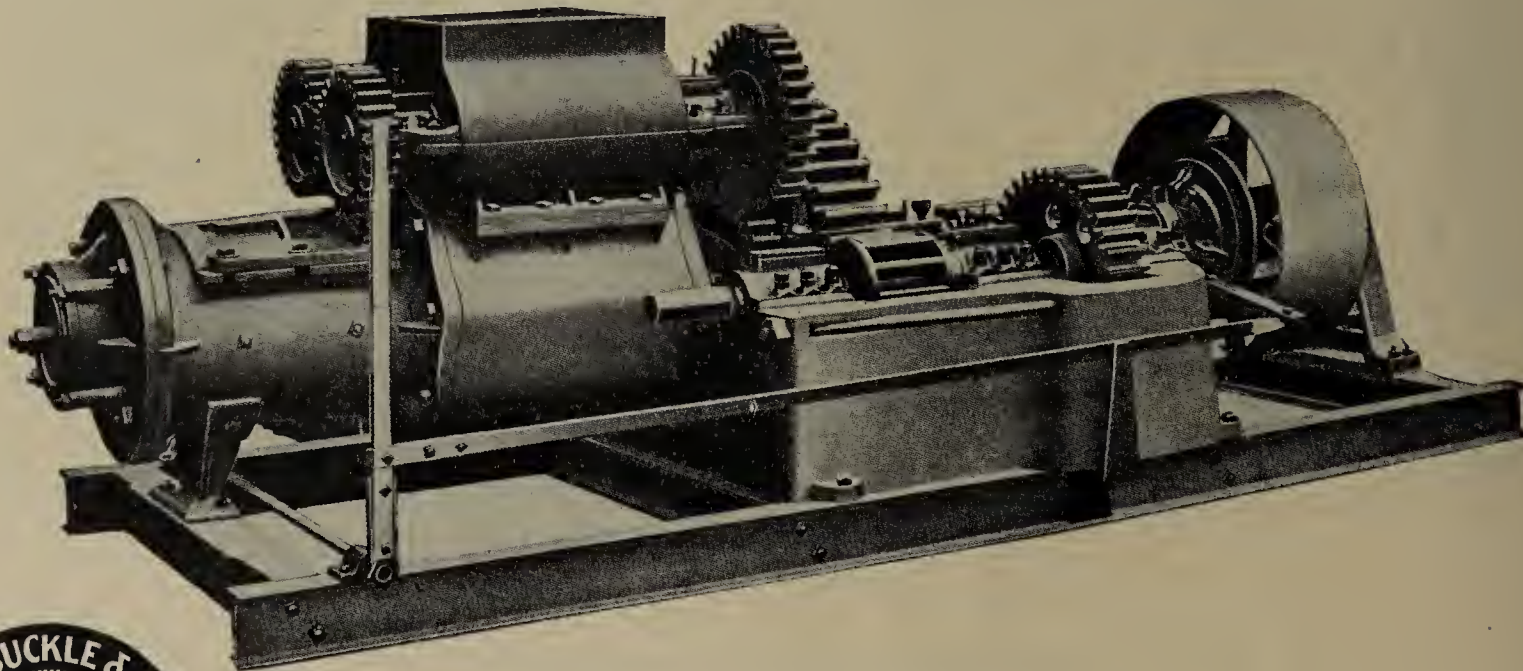
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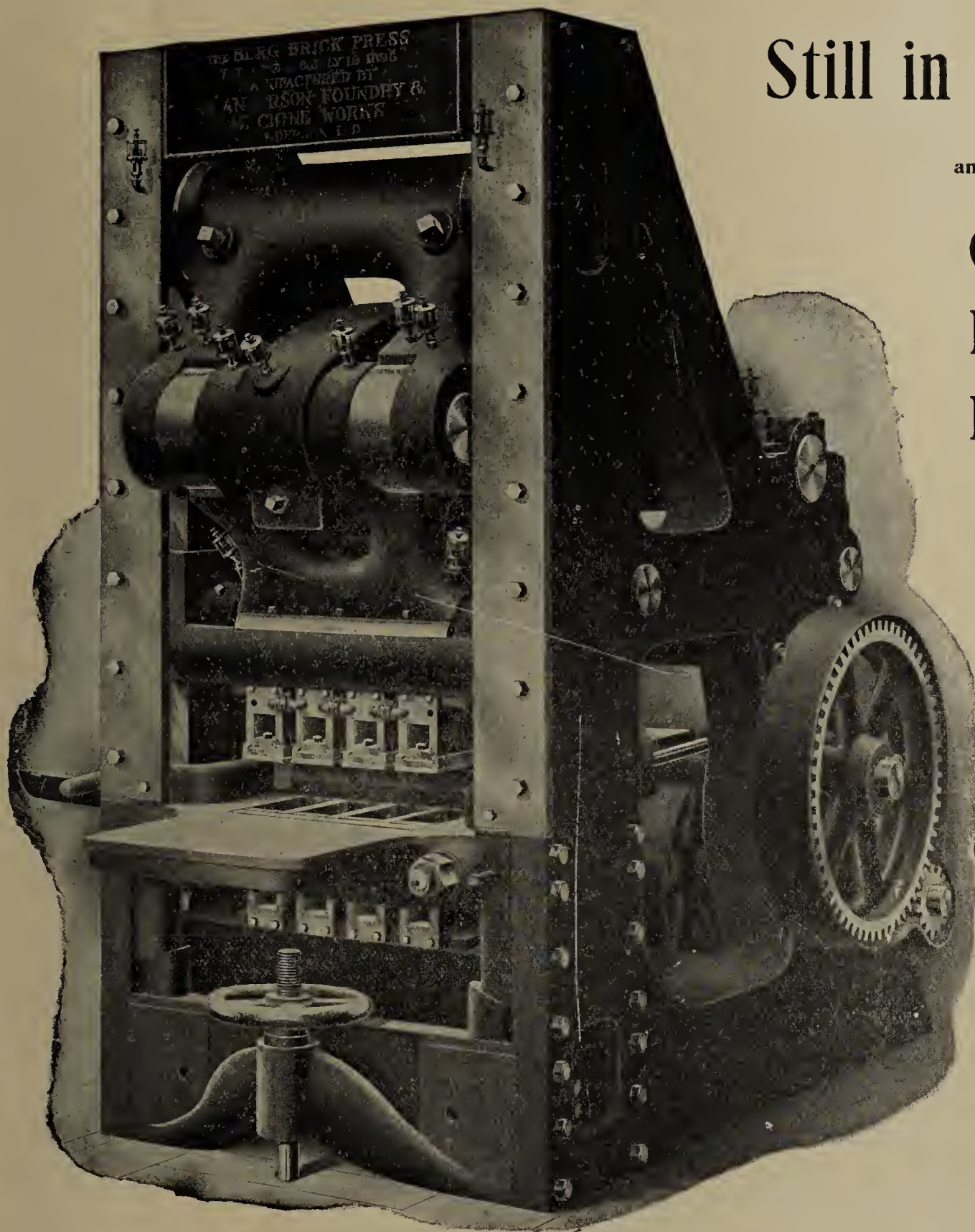
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Manufacturers' Equipment Co.
Phila. Brick Machine Works
Phillips & McLaren Co.

Potts & Co., C. & G.
The Stevenson Co.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.

Clay Dryers.

American Process Co.
Lancaster Iron Works.
Weller Mfg. Co.
Wellington Machine Co.

Clay Feeders and Mixers.

Arbuckle & Co.
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Marion Mach., Fdy. & Sup. Co.
Martin Bk. Mch. Mfg. Co., Henry
Phila. Brick Machine Works
Potts & Co., C. & G.
F. H. Robinson
The Stevenson Co.
Wellington Machine Co.

Clay Steamers.

Hadfield-Penfield Steel Co.
International Clay Mach. Co.
F. H. Robinson

Clay Technologists.

Bonnot Co., The
Ceramic Supply & Con. Co.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lovejoy, Ellis.
Wellington Machine Co.

Coal Unloader

Columbus Conveyor Co.
Weller Mfg. Co.

Coloring Materials.

Chattanooga Paint Co.
Hy-Grade Manganese Co.
National Paint and Manganese Co.

Ricketson Mineral Paint Co.
Roessler-Hasslacher Chem. Co.
Williams & Co., C. K.

Consulting Engineers.

Chase, Frank, Inc.
Lovejoy, Ellis.
Richardson, W. D.
Trautwein Dryer & Eng. Co.

Conveying Machinery.

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Phila. Brick Machine Works
Chambers Bros. Co.
Columbus Conveyor Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Potts & Co., C. & G.
F. H. Robinson
Toronto Foundry & Mach. Co.
The Weller Mfg. Co.
The Wellington Machine Co.

Continuous Kilns.

American Dressler Tunnel
Kilns, Inc.
Ceramic Supply & Con. Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.

Cutting Tables (Brick & Tile).

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.

International Clay Mach. Co.
Manufacturers' Equipment Co.
F. H. Robinson
Steele & Sons, J. C.
Wallace Mfg. Co.
The Wellington Machine Co.

Crushers.

Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Wellington Machine Co.

Cutting Wires.

Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers' Equipment Co.
F. H. Robinson

Dies.

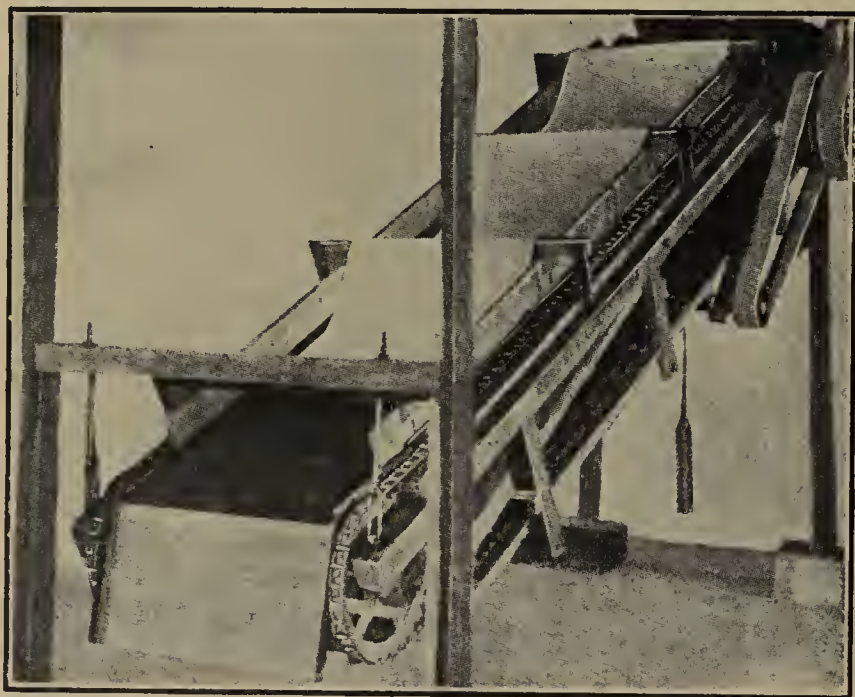
Arbuckle & Co.
Louisville Machine Mfg. Co.
Mueller Machine Co.
F. H. Robinson
The Stevenson Co.
Toronto Foundry & Mach. Co.

Disintegrators and Granulators.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Manufacturers' Equipment Co.
Potts & Co., C. & G.
F. H. Robinson
Steele & Son, J. C.
Wallace Mfg. Co.
The Wellington Machine Co.

(Continued on Page 532)

FUEL---COST---REDUCED



PERFECT CLAY SCREEN

WE POSITIVELY CAN
REDUCE FUEL COSTS.

To properly bond clay is much cheaper by water than by fire. The work of THE PERFECT CLAY SCREEN is so accurate from day to day that it enables the Clay Product Plants to operate much cheaper, and our Iron Clad Guarantee protects the purchaser.

DUNLAP MFG. CO.
Bloomington, Ill.

TOUGHNESS—or *nothing!*

A Conveyor Belt is either *tough—all the way through*—or it is practically worthless.

You want toughness—or *nothing*.

Because toughness alone will resist wear from abrasion, rotting from the effects of heat, water, steam.

If you *get* toughness, you aren't concerned about *how* a belt is made, *where* it is made, *who* makes it, or what is made of.

* * *

That's the basis upon which we sell LEVIATHAN Conveyor Belts.

We don't make a point of how, where, who or what—we simply say they're *tough*, and let it go at that. For that's the only important point.

* * *

LEVIATHAN Conveyors are tough for two reasons:

First, because they are Tensated. Tensation is an exclusive process which makes LEVIATHAN *dense*—so dense that it retains its body mile after mile, so dense that it is almost impossible for abrasive particles to work their way into its fibres.

Second, because they are impregnated with a material so remarkable in its composition that no one has ever been able to imitate it. A material which won't crack in the cold, won't melt in heat, resists acids and steam, and yet is always flexible and never sticky.

So, for *toughness*—LEVIATHAN.

* * *

Roller equipment is extremely important in setting up a conveyor.

Any conveyor will last longer with MAIN ADJUSTABLE CONVEYOR ROLLERS. LEVIATHAN Conveyors and MAIN Rollers make a thoroughly efficient unit.



Let us send you our booklet on "Conveyor Problems and Their Solution."

MAIN BELTING COMPANY, Philadelphia

New York

Chicago

Pittsburgh

San Francisco

MAIN BELTING COMPANY OF CANADA, Ltd., Montreal.

Leviathan and Anaconda Belts

TENSATED TO REMOVE STRETCH

Mention THE CLAY-WORKER.

Buyers Ready Reference List—Continued.

Draft Gauges.

Brown Instrument Co.
Ceramic Supply & Con. Co.
Frink Pyrometer Co.
Robinson, F. H.
Thwing Instrument Co.

Drain Tile Machinery.

(See Brick & Tile Machinery.)
Drums, Hoisting and Winding.
(See Supplies.)

Dryers.

American Process Co.
Boss Engineering Co., J. C.
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Proctor & Schwartz
F. H. Robinson
Rodgers Engr. Co., The L. E.
Standard Dry Kiln Co., The
Trautwein Dryer & Eng. Co.
Wellington Machine Co.

Dryer Cars.

Arbuckle & Co.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Potts & Co., C. & A.
F. H. Robinson

Rodgers Engr. Co., The L. E.
Standard Dry Kiln Co., The
Steele & Sons, J. C.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.
Wellington Machine Co.

Dry and Wet Pans.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machinery Co.
Chisholm, Boyd & White Co.
Eagle Iron Works
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Phillips & McLaren Co.
The Stevenson Co.
Toronto Foundry & Mach. Co.

Dump and Clay Cars.

Arbuckle & Co.
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works
Manufacturers' Equipment Co.

Martin Bk. Mch. Mfg. Co., Henry
Potts & Co., C. & A.
F. H. Robinson
Steele & Sons, J. C.
Toronto Foundry & Mach. Co.
Weller Mfg. Co.
Wellington Machine Co.

Electrical Locomotives.

Westinghouse Elec. & Mfg. Co.

Electrical Supplies.

Hadfield-Penfield Steel Co.
Westinghouse Elec. & Mfg. Co.

Elevating Equipment.
(See Conveyors.)

Engines.

Arbuckle & Co.
Chambers Bros. Co.
Frost Mfg. Co.
International Clay Mach'y Co.
Phila. Brick Machine Works

Fans.

Boss Engineering Co., J. C.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers' Equipment Co.
Rodgers Engr. Co., The L. E.

Feed Water Heaters.

Arbuckle & Co.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.

Filter Presses.

Bonnot Co., The

Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Mueller Machine Co.

Fire Brick and Fire Clay.
Parker-Russell M. & M. Co.

Friction Clutch Pulleys.
(See Supplies.)

Furnaces.

Brown Instrument Co., The
Lancaster Iron Works

Gas Fire Continuous Kilns.
International Clay Mach'y Co.
Manufacturers' Equipment Co.

Grates.

Arbuckle & Co.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Marlon Mach., Fdy. & Sup. Co.
Potts & Co., C. & G.
Wellington Machine Co.

Gravity Carriers.

Mathews Gravity Carrier Co.

Gravity Haulage.

Hadfield-Penfield Steel Co.
The Stevenson Co.

Hand-Power Presses.

Phila. Brick Machine Works
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Mueller Machine Co.

(Continued on Page 531)

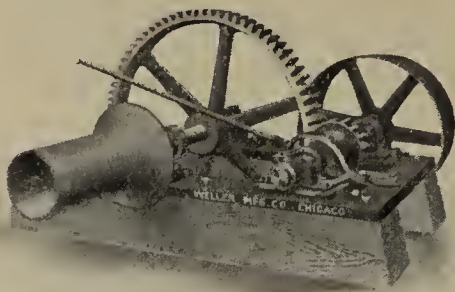
WELLER SPIRAL CONVEYORS

GIVE THE SERVICE



THE MUTUAL POTTERIES, TRENTON, N. J.,

Saves the rehandling and the time of two men per car by using WELLER SPIRAL CONVEYORS and BUCKET ELEVATORS in the handling of their clay. The Weller equipment also enables them to use longer bins and makes possible greater storage area by piling right up to the ceiling. If you have a clay handling problem write us.



EVERY CLAY PLANT NEEDS WELLER EQUIPMENT

Our many years of experience in the making of mechanical equipment places us in a position to give you the best possible advice in regard to the installation of the proper machinery to increase the output and reduce operating cost.

THIS SERVICE IS FREE

WELLER MFG. CO.

General Office and Works, 1820-1856 N. Kostner Ave., Chicago, Ill.

SALES OFFICES

New York

Boston

Baltimore

Pittsburgh

Cleveland

Salt Lake City

San Francisco



Mention THE CLAY-WORKER.



For Severe Service

Successful performance for many years of the Westinghouse CW Motor has gained for it a high reputation in the brick and clay industries.

This motor has distinctive features which make it particularly adaptable for heavy duty.

Some of these features are: strong starting effort, with small starting current; high efficiency; rugged construction, few parts—making maintenance easy; dust-proof bearings.

Electrical Equipment

Generating Equipment
Stokers

Switchboards
Motors and control

Westinghouse Electric & Manufacturing Company
East Pittsburgh, Pa.

Westinghouse

Mention THE CLAY-WORKER

Buyers Ready Reference List—Continued.

Hollow Brick Machinery.

Arbuckle & Co.
Bonnot Co., The
Brewer Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers' Equipment Co.
F. H. Robinson
The Stevenson Co.
Wallace Mfg. Co.

Kilns.

American Dressler Tunnel
Kilns, Inc.
Boss Engineering Co., J. C.
International Clay Mach. Co.
Richardson, W. D.
Rodgers Engineering Co., L. E.
Tecktonius Mfg. Co., E. C.
Trautwein Dryer & Eng. Co.

Kiln Bands, Doors, Castings,
Frames, Etc.

(See Supplies.)

Knives.

(See Supplies.)

Locomotives.

Fate-Root-Heath Co.

Manganese.

National Paint and Manganese
Co.
Hy-Grade Manganese Co.

Mechanical Draft.

Boss Engineering Co., J. C.
Hadfield-Penfield Steel Co.
Manufacturers' Equipment Co.
Trautwein Dryer & Eng. Co.

Mineral Paint.

(See Coloring Materials.)

Molds (Brick).

Carnell, Geo.
Eastern Brick Machinery Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Potts & Co., C. & G.
Robinson, F. H.

Mold Sanders.

Eastern Brick Machinery Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works.
Martin Bk. Mch. Mfg. Co., Henry
Phila. Brick Machine Works
Potts & Co., C. & G.
Wallace Mfg. Co.
Wellington Machine Co.

Mortar Colors.

Ricketson Mineral Paint Works.

Motors.

Westinghouse Elec. & Mfg. Co.

Motor Trucks

Fate-Root-Heath Co.

Oil Burners.

Chicago Brick Machinery Co.
Lancaster Iron Works.
Schurs Oil Burner Co.

Pallets.

Ohio Galvanizing & Mfg. Co.
F. H. Robinson

Pans (Dry and Wet).

(See Dry and Wet Pans.)

Paving Brick or Block.

(See Brick.)

Perforated Sheet Metal

Harrington & King Perf. Co.
F. H. Robinson

Portable Track.

Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers' Equipment Co.
F. H. Robinson

Pottery Machinery.

Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Mueller Machine Co., Inc.

Power Plant Equipment.

Arbuckle & Co.
Hadfield-Penfield Steel Co.
Rodgers Engr. Co., The L. E.
Trautwein Dryer & Eng. Co.
Weller Mfg. Co.

Presses.

(See Brick Machines, also Sewer
Pipe Machinery, also Roof-
ing Tile Machinery.)

Pug Mills

Anderson Fdy. & Mach. Works.
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Mueller Machine Co.
Phila. Brick Machine Works
Potts & Co., C. & G.
F. H. Robinson
Steele & Sons, J. C.
The Stevenson Co.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.
The Wellington Machine Co.

Pulverizers.

Arbuckle & Co.
Bonnot Co., The
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers' Equipment Co.
Mueller Machine Co.
The Stevenson Co.
Wellington Machine Co.

Pyrometers.

Rodgers Engr. Co., The L. E.
Thwing Instrument Co., The

Rails and Railway Equipment.

Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Richardson & Co.

Rattlers (Paving Brick).

Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Phillips & McLaren Co.
F. H. Robinson

Represses.

Arbuckle & Co.
Bonnot Co., The
Chambers Bros. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Phila. Brick Machine Works
F. H. Robinson

Revolution Indicators.

Thwing Instrument Co.

Revolving Steam Shovels.

Hadfield-Penfield Steel Co.

Rock Crushers.

Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
Phillips & McLaren Co.
F. H. Robinson
The Stevenson Co.

Roofing Tile Machinery.

Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Mueller Machine Co.

Rotary Dryers.

American Process Co.
Anderson Fdy. & Mach. Works.
Bonnot Co., The
Fate-Root-Heath Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Lancaster Iron Works
Wellington Machine Co.
Weller Mfg. Co.

Sand Dryer and Sand Sieves.

American Process Co.
Hadfield-Penfield Steel Co.
Lancaster Iron Works.
Martin Bk. Mch. Mfg. Co., Henry
Wellington Machine Co.

Sand Lime Brick Machinery.

Anderson Fdy. & Mach. Works
Ceramic Supply & Con. Co.
Chisholm, Boyd & White Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.

Scrapers, Plows and Clay
Gatherers.

Eagle Iron Works

Screens.

Arbuckle & Co.
Brewer & Co., H.
Bonnot Co., The
Chambers Bros. Co.
Dunlap Mfg. Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
Harrington & King Perf. Co.
International Clay Mach. Co.
Louisville Machine Mfg. Co.
Manufacturers' Equipment Co.
Phila. Brick Machine Works
F. H. Robinson
The Stevenson Co.
Weller Mfg. Co.
Wellington Machine Co.

Sewer Pipe Machinery.

Brewer & Co., H.
Hadfield-Penfield Steel Co.
International Clay Mach'y Co.
The Stevenson Co.
Taplin-Rice-Clerkin Co.
Toronto Foundry & Mach. Co.

Shale Planers.

Arbuckle & Co.
Eagle Iron Works.

Stacks.

Lancaster Iron Works.

Steam Shovels.

Hadfield-Penfield Steel Co.

Steam Specialties.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.
Wellington Machine Co.

Steam Traps.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
Standard Dry Kiln Co.
Trautwein Dryer & Eng. Co.
Wellington Machine Co.

Steel Pallets.

Ohio Galvanizing Co.
F. H. Robinson

Supplies.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Chase Fdy. & Mfg. Co.
Chicago Brick Machinery Co.
Chisholm, Boyd & White
Eastern Brick Machinery Co.
Fate-Root-Heath Co.
Freese & Co., E. M.
Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Phila. Brick Machine Works
Potts & Co., C. & G.
Lancaster Iron Works.
Louisville Machine Mfg. Co.
Manufacturers' Equipment Co.
Martin Bk. Mch. Mfg. Co., Henry
F. H. Robinson
Steele & Sons.
Tecktonius Mfg. Co., E. C.
Toronto Foundry & Mach. Co.
Wallace Mfg. Co.
Weller Mfg. Co.
Wellington Machine Co.

Switches.

F. H. Robinson

Tanks and Towers.

Lancaster Iron Works.
Weller Mfg. Co.

Tempering Wheels.

Phila. Brick Machine Works

Thermometers.

Rodgers Engr. Co., The L. E.
Thwing Instrument Co.
Trautwein Dryer & Eng. Co.

Tile Machines.

Anderson Fdy. & Mach. Works
Arbuckle & Co.
Bonnot Co., The
Brewer & Co., H.
Fate-Root-Heath Co.
Freese & Co., E. M.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers' Equipment Co.
Mueller Machine Co.
Potts & Co., C. & G.
F. H. Robinson
The Stevenson Co.
Wallace Mfg. Co.

Time Recorder

Robinson, F. H.
Thwing Instrument Co.

Tracks and Switches.

(See Rails.)

Transfer Cars and Turn Tables.
(See Supplies.)

Trowel.

The M. P. Trowel Agency.

Turn Tables.

Bonnot Co., The
Hadfield-Penfield Steel Co.
F. H. Robinson
Wellington Machine Co.

Unloading Device for Pans.

Frost Mfg. Co.
Hadfield-Penfield Steel Co.
International Clay Mach. Co.
Manufacturers' Equipment Co.
The Stevenson Co.
Toronto Foundry & Mach. Co.

Voltmeters.

Thwing Instrument Co.

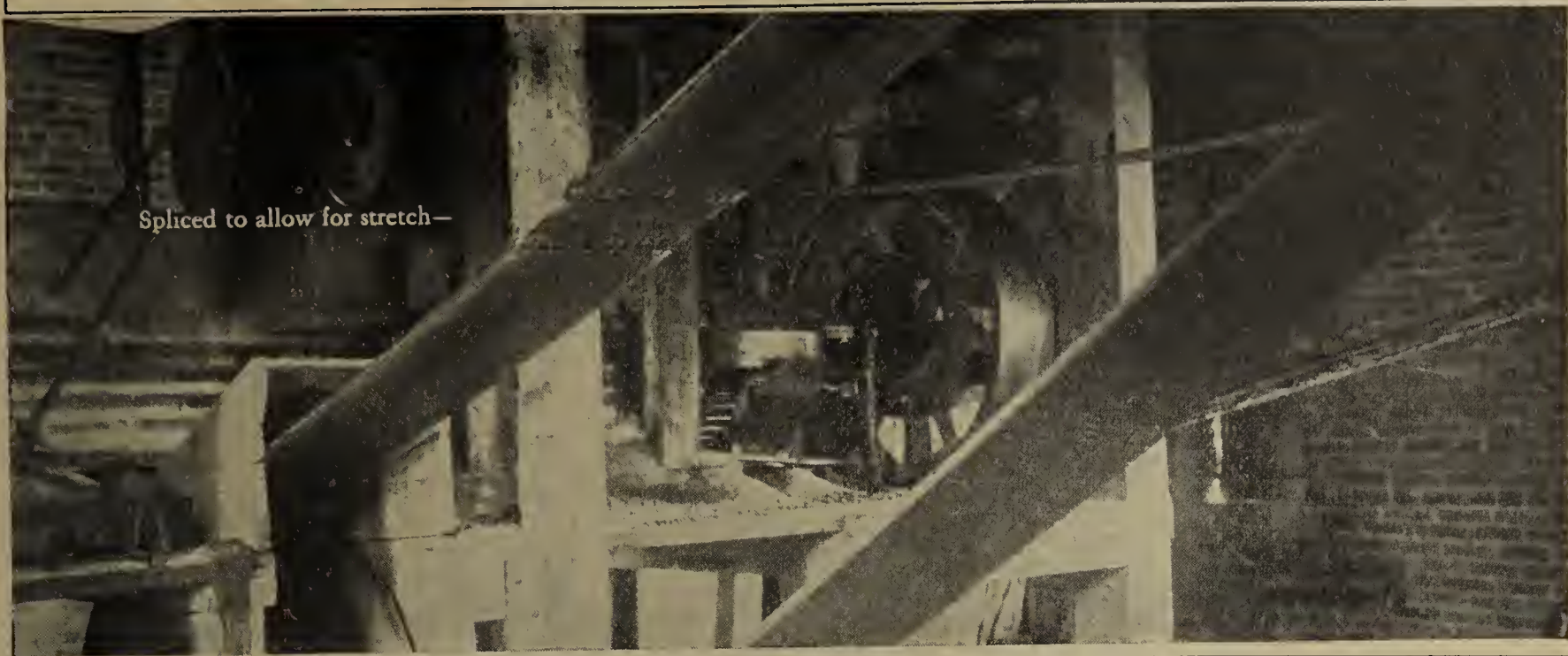
Wheelbarrows.

(See Barrows.)

Wet Pans.

(See Pans.)

GANDY *is a* BETTER BELT



Spliced to allow for stretch—

“But the Gandy Wouldn’t Stretch”

“I ORDERED that piece of Gandy Belt 8 inches short and spliced in the shim, to allow for stretch,” said Mr. T. H. Mitchell, manager of the Salisbury Brick Company, “but”—he continued—“the Gandy wouldn’t stretch.”

It is inbuilt quality—close weaving, smooth folding, tight stitching, careful stretching and the famous Gandy oil treatment that makes Gandy Stitched Cotton Duck Belting the best for Main Drives, Elevators and Conveyors.

Order a Gandy from your Mill Supply House, or direct from us if they can’t supply you—test Gandy service in your own plant.

“It’s the belt with the Green Edge”



—THE—
GANDY BELTING COMPANY

MAIN OFFICE AND FACTORY: 749 WEST PRATT ST., BALTIMORE, MD.
NEW YORK: 36 WARREN STREET CHICAGO: 552 W. ADAMS STREET



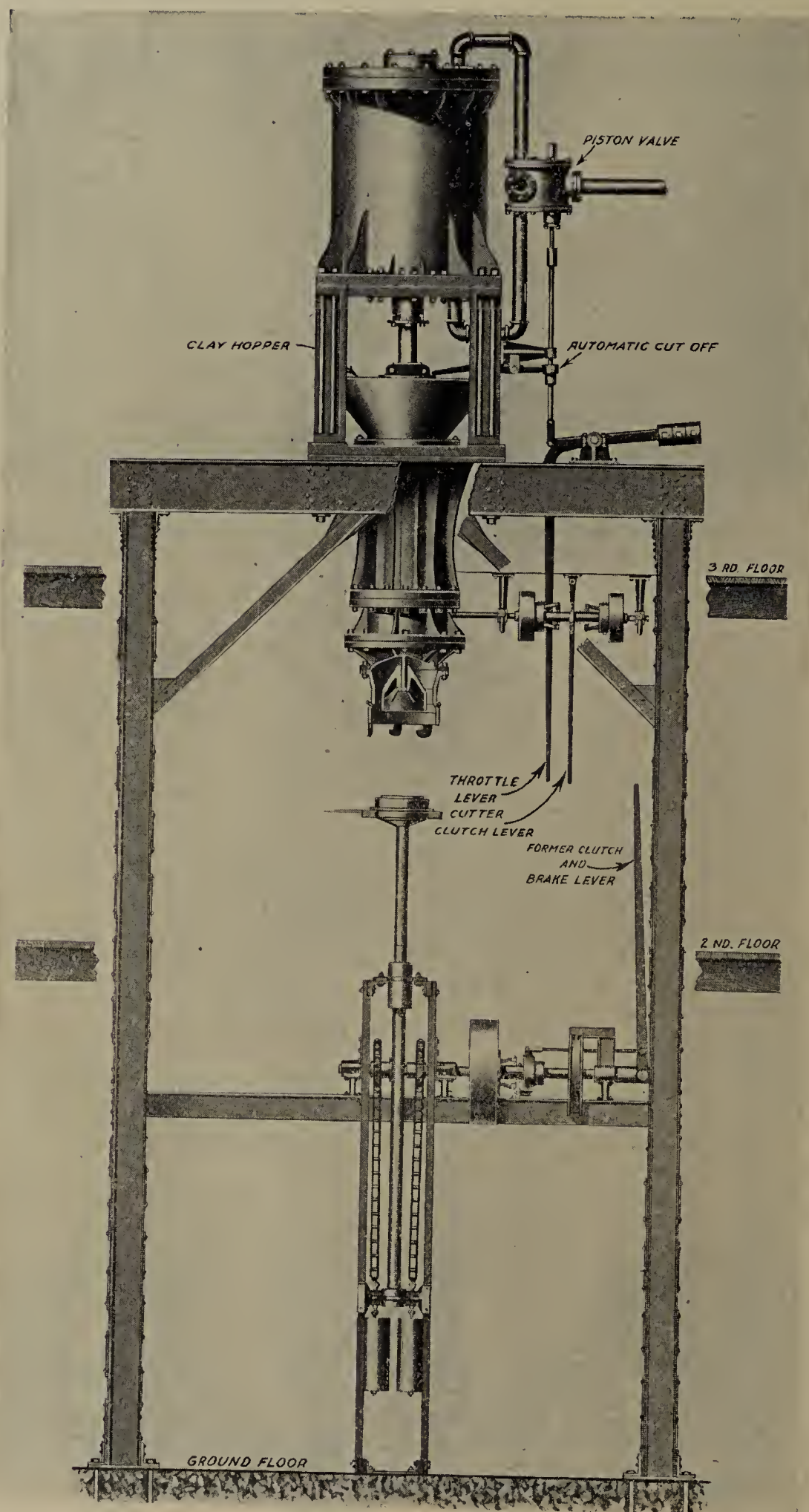
GANDY

STITCHED COTTON DUCK

BELT

TORONTO SEWER PIPE PRESSES

STRONG
DEPENDABLE
QUICK
ACTING



SIZES:-

40=44=46=48"
Steam Cylinders

18=20=22=24"
Clay Cylinders

ATTRACTIVE
FEATURES:-

Long Stroke

Large Filling
Space

Clay Hopper

Piston Valve

Automatic
Cut = Off

But Three
Levers To
Operate.

THE TORONTO FOUNDRY & MACHINE CO.
TORONTO, OHIO

Mention THE CLAY-WORKER.

PAVE WITH BRICK

Be a Booster for Brick Streets and Brick Paved Highways
Get a Miniature Pave With Brick Sign. T.A.Randall & Co., Indianapolis, Ind.

MEDAL

Repressed and Wire Cut Lug Paving Brick.
The block with experience and service behind it.
THE MEDAL PAVING BRICK CO.
Cleveland, Ohio

ALTON BRICK COMPANY

Makers of High Quality Brick for
Roadways and Permanent Buildings.
Repressed and Wire-Cut-Lug Block.
ALTON, ILLINOIS

PAVING BUILDING • BRICK AND BLOCK • SIDEWALK FOUNDATION

The Barr Clay Co.

C. C. BARR, Pres., Streator, Ill.

PROMENADE TILE

Chocolate Red
Highest Vitrification—Lowest Absorption.
BEST BY TEST.

KUSHEQUA KERAMIC COMPANY,
Kushequa, Pa.

OXBLOOD RED FRONT BRICKS
DEVONSHIRES and REPRESSED

KUSHEQUA

Highly Vitrified by Natural Gas.
Tough Paving Blocks, Beautiful in Color and Finish.
KUSHEQUA BRICK CO., Kushequa, Pa.

DOVER FIRE BRICK CO.

Cleveland, Ohio
Manufacturers of Highest Quality
Pennsylvania Ohio Missouri
FIRE BRICK GROUND FIRE CLAY
Brands: Farber, Mo. High Grade
North Bend Dover Buckeye

PURINGTON PAVERS
ARE MADE OF

GALESBURG SHALE

PURINGTON PAVING BRICK CO.
GALESBURG, ILL.

PAVE ONCE! PAVE RIGHT!! PAVE WITH BRICK!!!

The experience of years has proven
brick to be the only "Durable"
wearing surface for streets and
highways.

Write us for our latest specifications.

MURPHYSBORO PAVING BRICK CO.
Murphysboro, Illinois.

Best Paving Brick Made



DAILY
CAPACITY
1,000,000
BRICK



The Metropolitan Paving Brick Co.
CANTON, OHIO

Clayworking Plants Designed and Constructed

Brick and Tile Plants Appraised.
Clay Deposits Surveyed and Valued.

Let me help you solve your drying and burn-
ing problems from the standpoint of a practical
brickmaker of many years' experience.

A. W. Beecher, Indianapolis, Ind.

More About the Dickinson Machine

I have read Mr. R. C. Penfield's notice in last issue of this paper with keen enjoyment. We are making him take notice of us anyway. I would not call his statement exactly correct. True he won in the first round, but the case was appealed November 7th, last. Am informed by my attorney that no matter which way the case goes Mr. Penfield has to make some arrangement with me before he can use his patents as they both are an improvement on two of my old patents.

We have sort of made a big smoke and have kept Mr. Penfield looking at this smoke. He could not see behind it. We did not intend for him to see behind it, for behind it we were taking out patents and making complete working drawings of a machine for hacking either end cut or side cut stiff mud brick directly from the belt onto the dryer cars in any formation cared for — of a machine for automatically hacking soft mud brick for the setting machine.

This machine empties the pallets, hacks the brick in any desired kind of unit and automatically dumps the empty pallet onto the cable conveyor that returns the empty pallet to the machine. We do not intend to ask Mr. Soft Mud Brick Manufacturer to change his dryer in any way, provided it is a rack pipe dryer. Also we will give him a setting machine which is absolutely automatic and does not depend on any outside mechanical device to close up any loose setting left for drying. We will give you a Kiln built in sections and moved with a crane. This has been used for the past two years with great success.

What we have got is a revelation to the brick manufacturer. Our patents are clean and our mechanical arrangement is perfect.

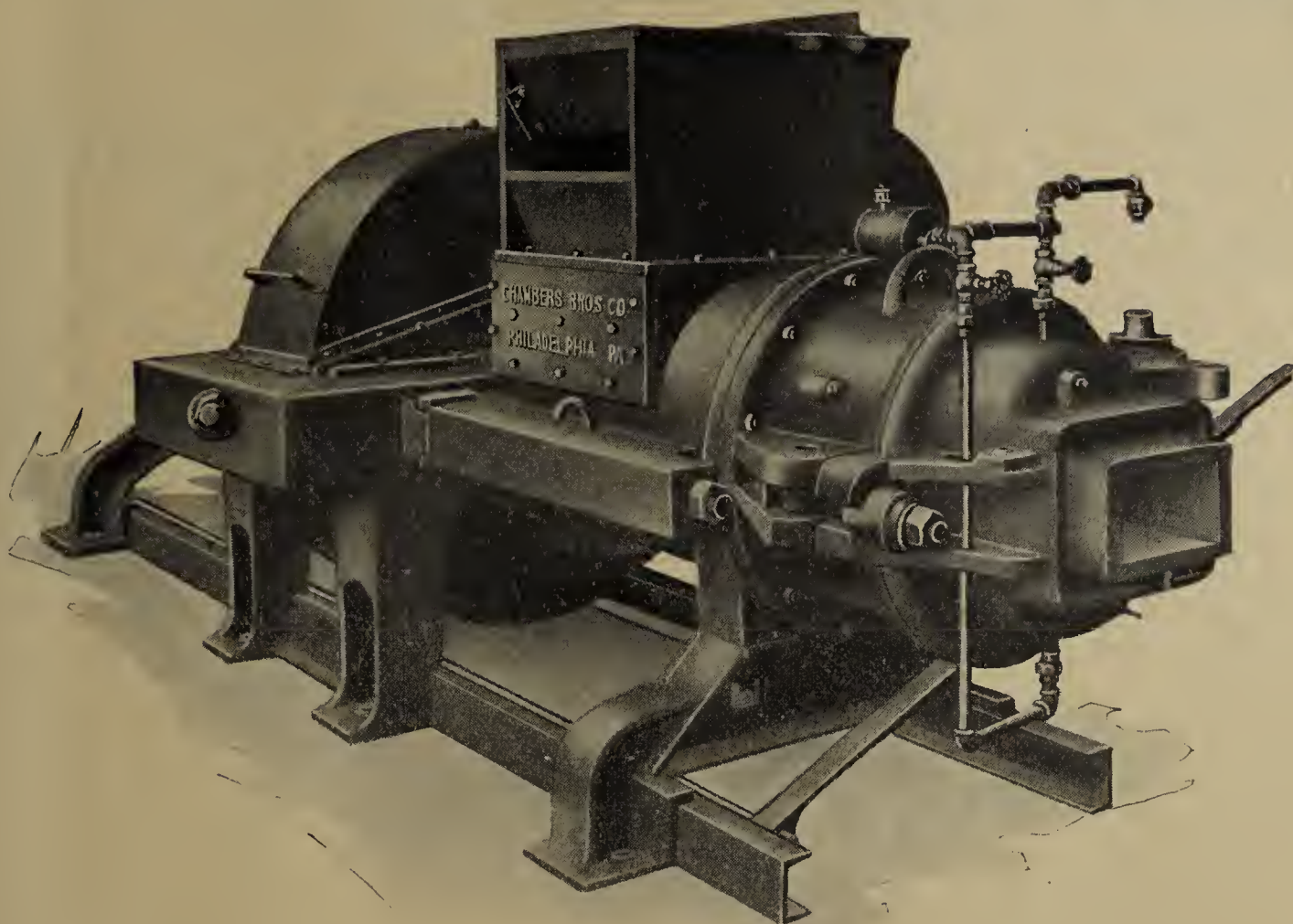
Any one contemplating putting in an automatic arrangement should give us a chance. We think that we have the best layout in the brick game and we leave it to you to judge.

We are going to steer clear of Mr. Penfield's patents and are in no way going to infringe and would expect to be sued should we do so. And I might add in closing that we expect Mr. Penfield to show the same careful consideration of ours.

Yours very truly,

W. W. DICKINSON, Jr.

NUMBER TWO SIZE KEYSTONE AUGER MACHINE



**Showing ROTARY HOPPER FEEDER and the Piping
for the TWO POINT LUBRICATING DIE.**

This Method of Die Lubrication is a Marked Improvement.

Main gear frame casting weighs about 3,500 pounds. Gears have cut teeth and are enclosed to run in oil. Simple, strong, rugged construction and ready for hard work. Machine exclusive of cutter weighs about 15000 pounds.

Straight barrel, with thirteen-inch auger as standard construction. Illustration shows the regular side-cut brick die holder. This is interchangeable with another pattern for building tile. Machine is readily changeable to receive an auger sixteen inches diameter. Driving shaft is four inches diameter. Clutch pulley 44 x 12 inches is standard. Room for larger pulley if necessary. Forged steel auger shaft, terminating in our long established self-aligning and adjustable end-thrust.

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1776--The Sesqui-Centennial--1926

'Twas the night before Christmas!

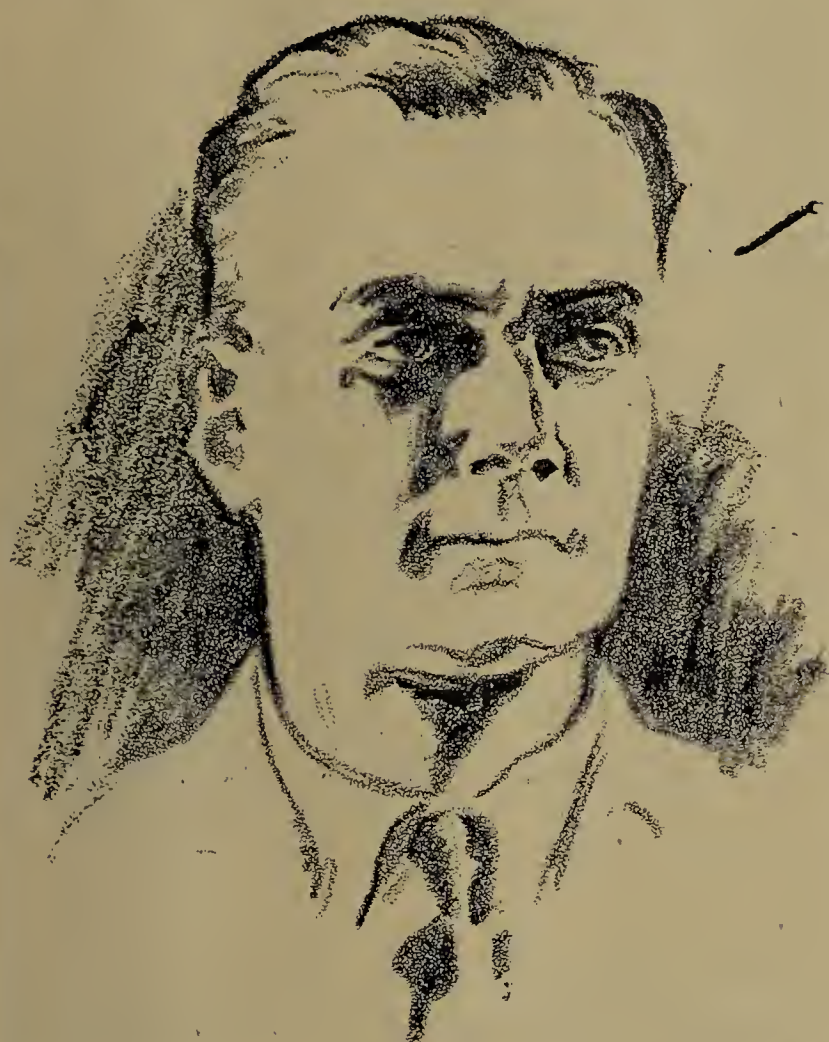
'Twas the night before Christmas,
And all thru the plant
The checked and cracked brick
Worried Foreman Bill Gant.
So he called up old Santa
And said, "Say friend Claus,
Wont you do me a favor
And bring for the Boss
That new book on the Drier
That's so easy to run?
Not one long on 'claims,'
But a much better one,
That dares point to its users
And willingly say,
'Ask them—direct—
That's the surest way.'
Just write to The Standard,
1547 McCarty St.
The book they will send
Is valuable, complete.
If you'll do that, Santa Friend,
You'll help us all year;
For the results will mean profits
As well as good cheer.'"

A Merry Christmas!

THE STANDARD DRY KILN CO.

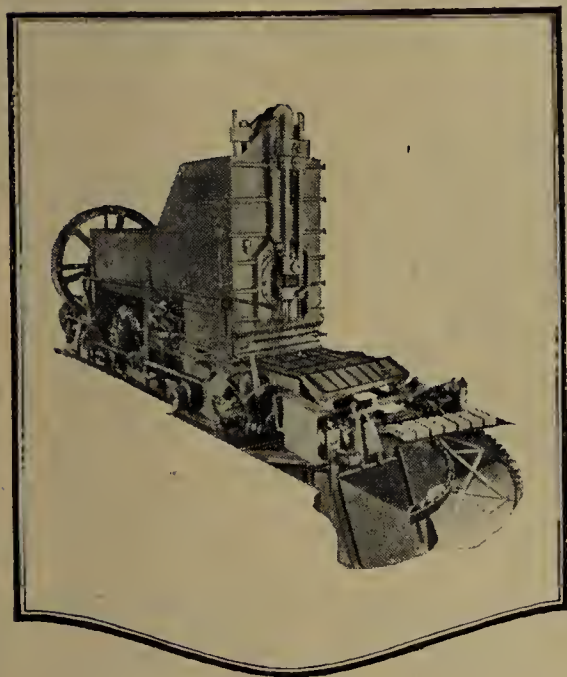
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*—and the
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1. That no longer is there a dread of coming to work in the morning and finding no bumpers and dumpers. The AutoBrik Machine has made him independent of that labor.
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3. The AutoBrik Machine is not only solving the labor problem, but AutoBrik are being used for purposes where common brick would not ordinarily do. They are a common sand-molded building brick made by the soft mud process but have face brick characteristics.



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James P. Martin, Manager

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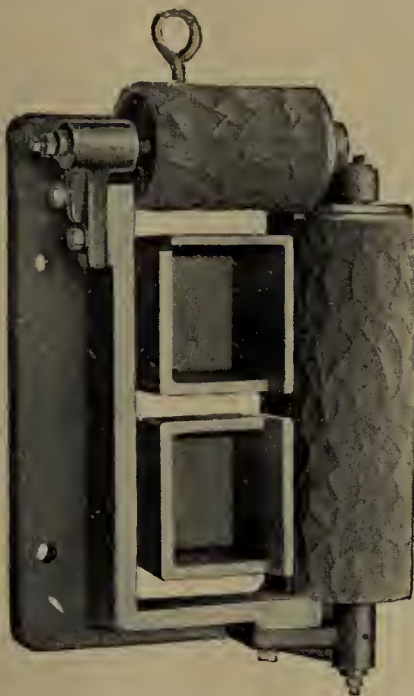
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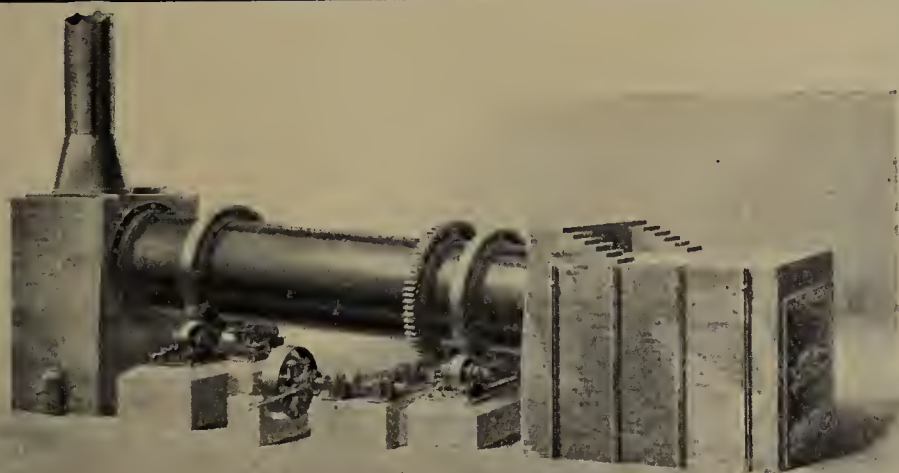
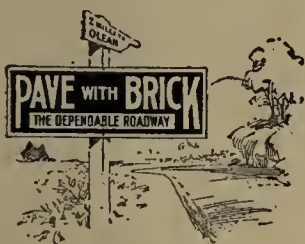
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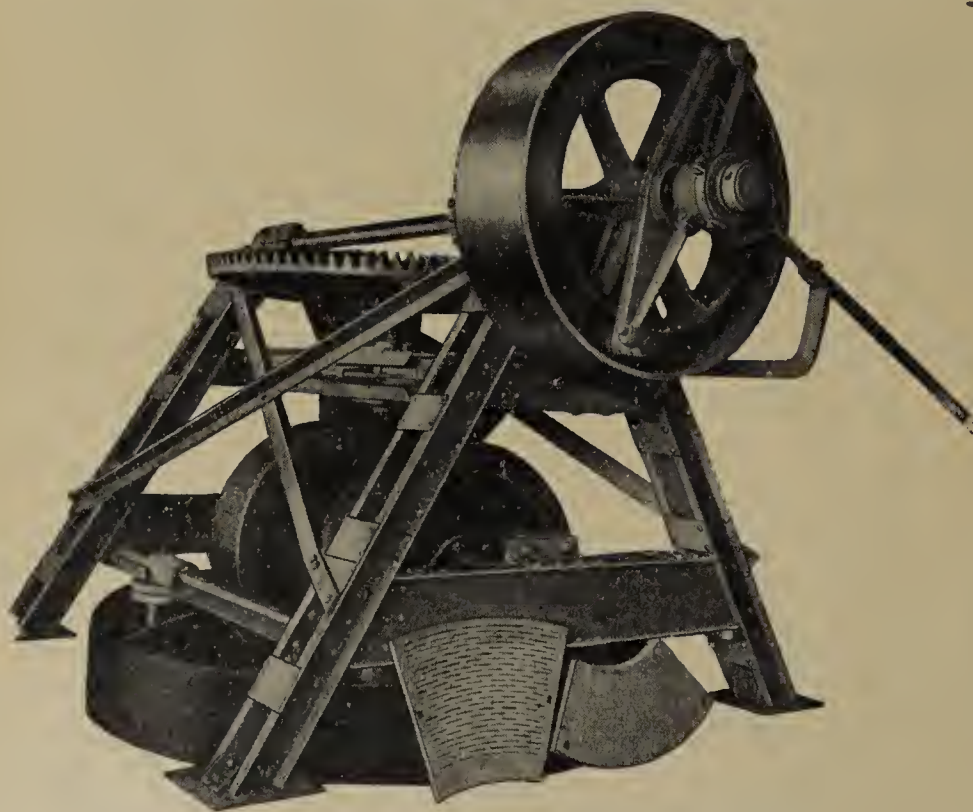
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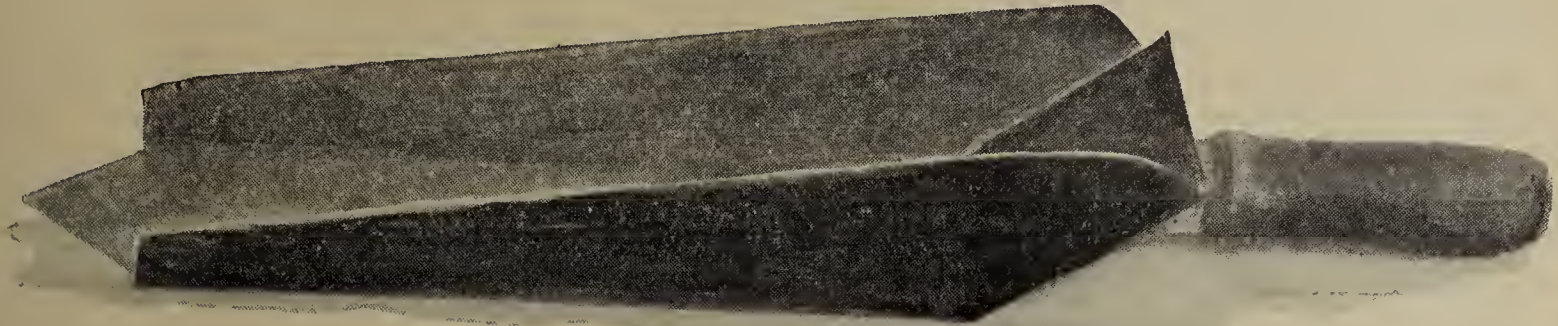
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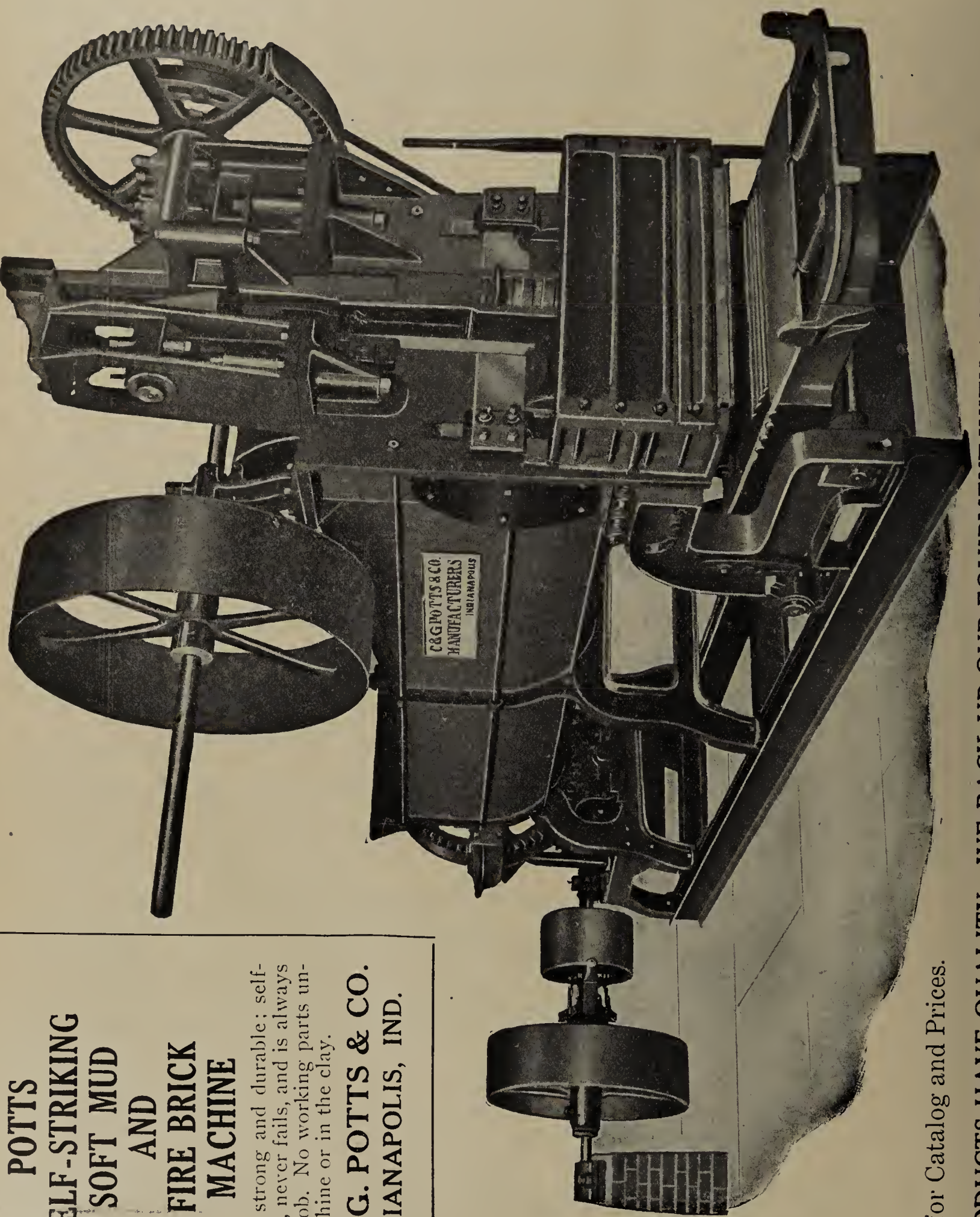
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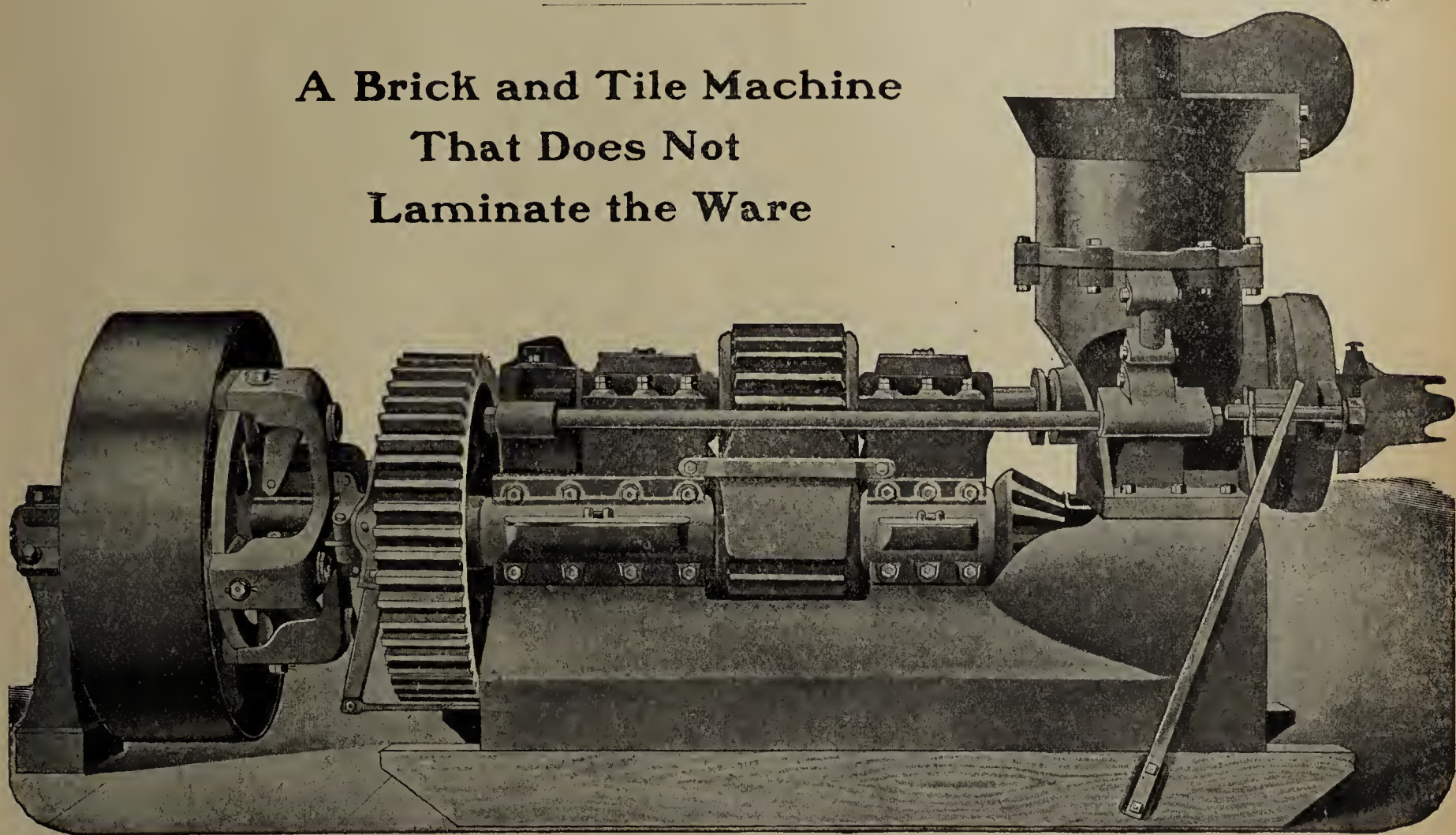
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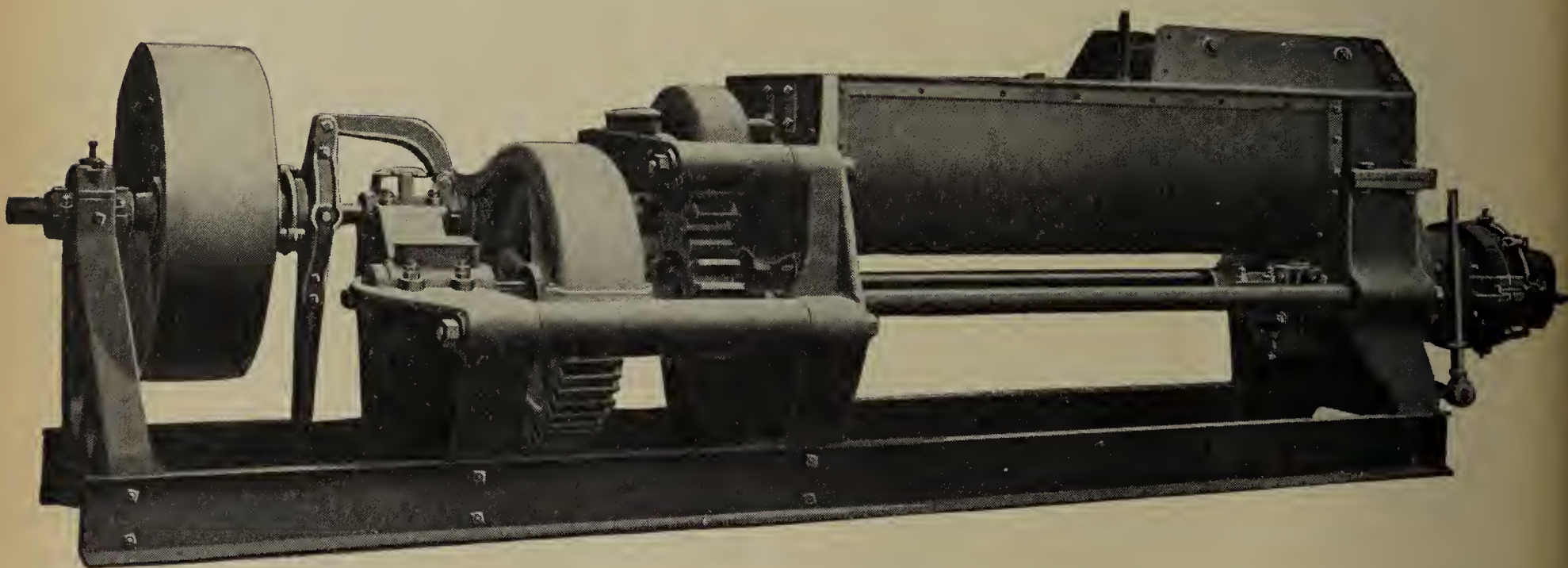
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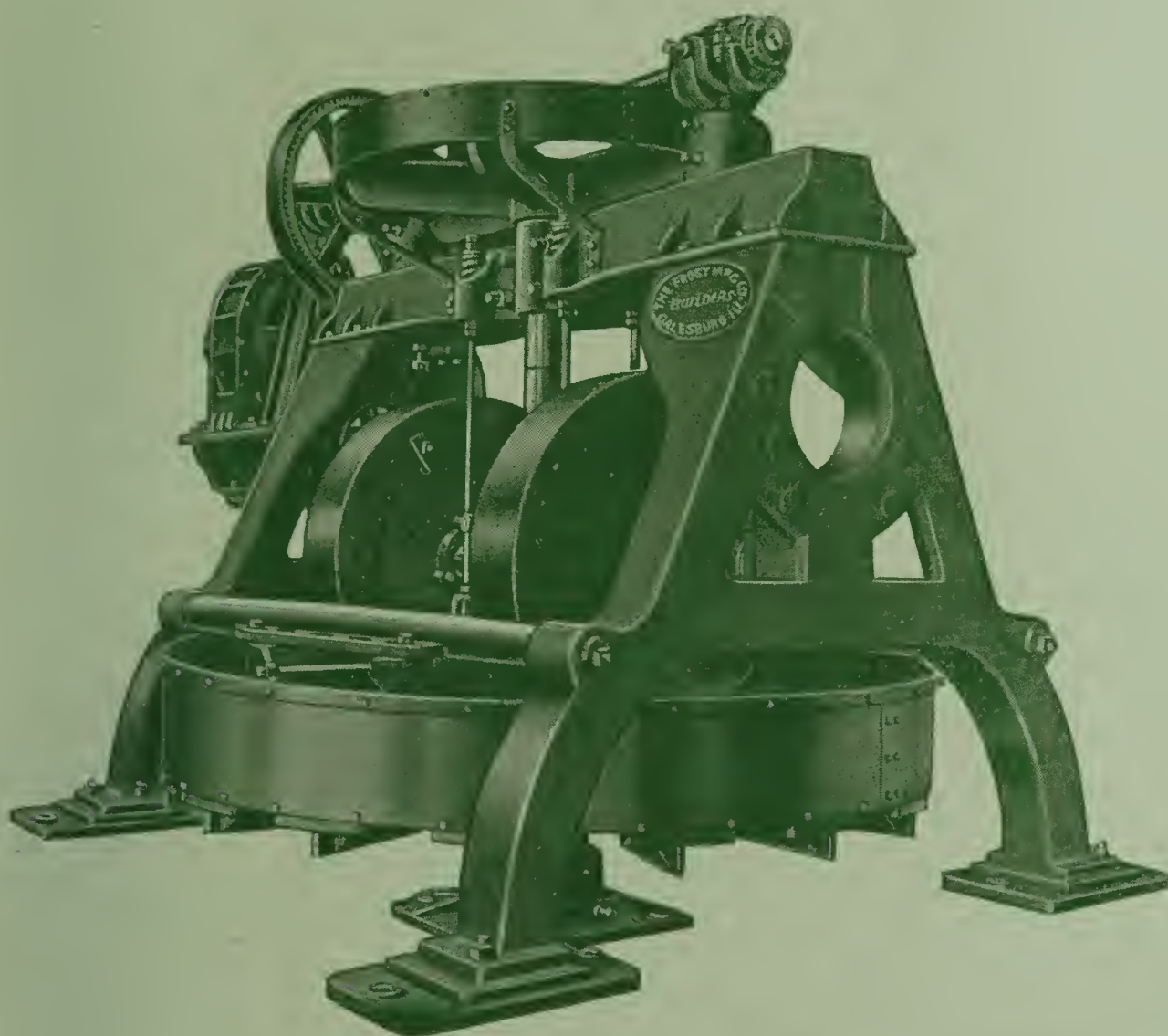
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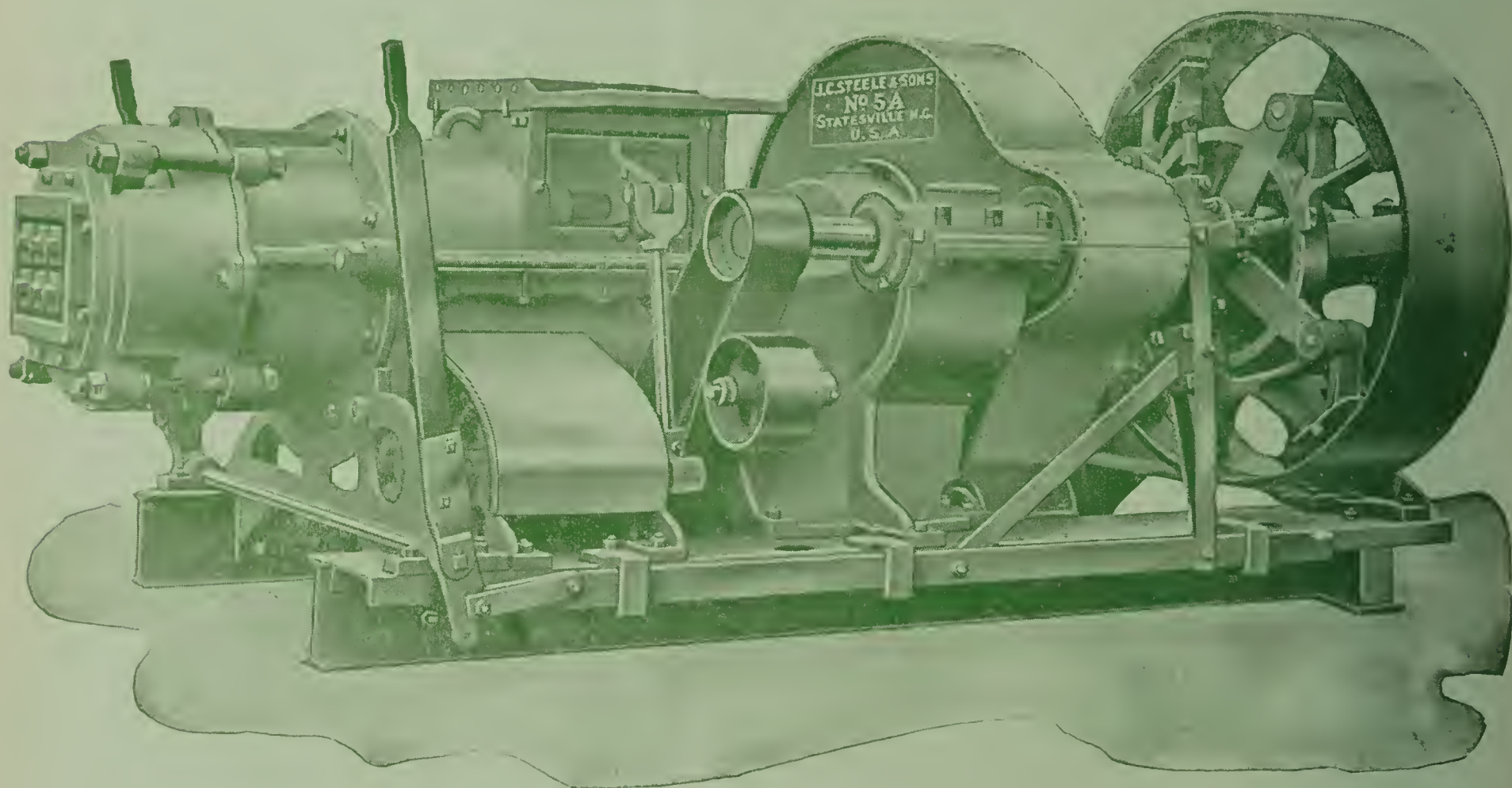
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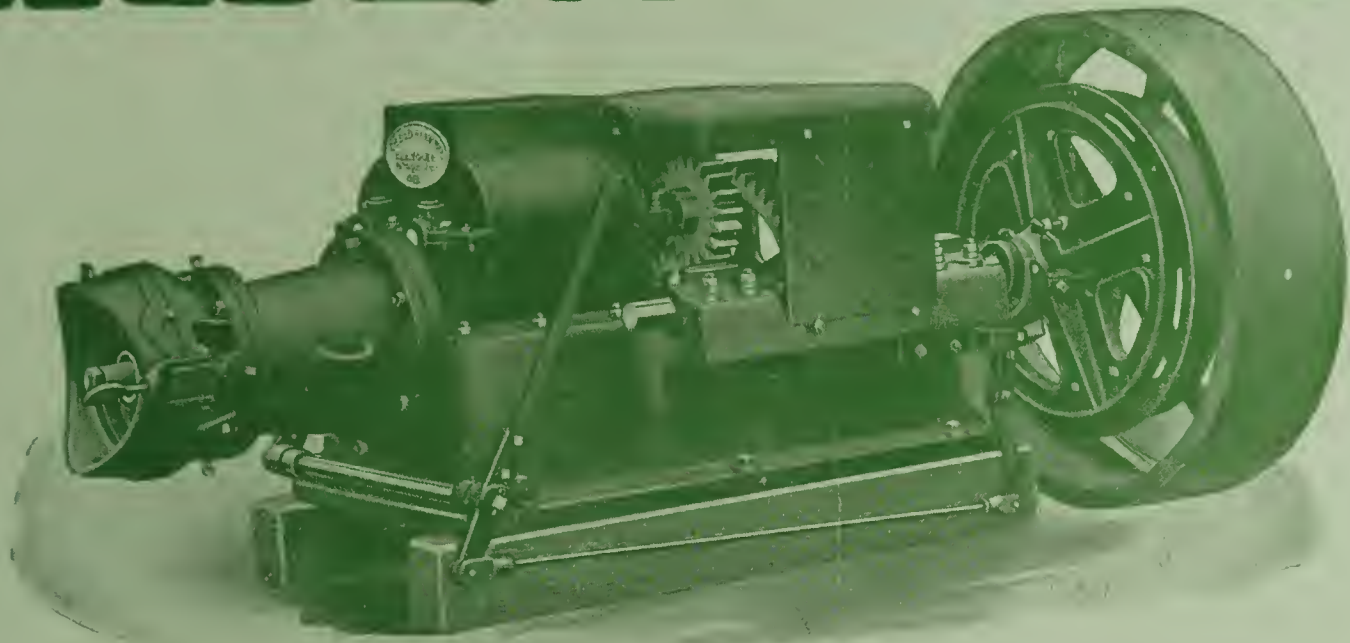
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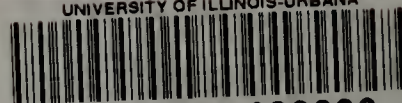
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